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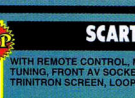
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Create monstrous
programs using our
essential guide to
starting with bits and bytes



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REVIEWS



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As the financial year comes to a close we celebrate with a selection of cheap and cheery games.

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■ Dreaming of becoming a spy kind of guy? Turn to page 64.



Queries can be answered only in the pages of the magazine. Sorry, we cannot reply to individuals in any shape or form. For general ST problems, call the official Atari helpline on 031 332 9323 (Mon - Sat 8pm - 11pm, Sun 8pm - 11pm)

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Paula Richards, Editor

WELCOME TO ST FORMAT!

Hello there! Congratulations – you’ve made a good choice in picking up the best mag for your ST – and this issue is even better than the last – if that’s possible. This month we’re helping you along the way to starting programming – where the best places to begin are, how you can cheat if you can’t face a fully-fledged language and, to give you some inspiration, how the best in the business got going.

Then we show you the best way to make your ST work harder, faster and more effectively to help you produce real quality graphics – no more excuses

about slow screen redraws and not enough detail. We follow this with a feature on games for at least two people, so, remember, the more the merrier, get out your null modem lead and you need never have to play alone again! Of course, there’s also the usual selection of news, reviews, hints and tips, making this an indispensable issue. Finally, could we ask a favour – please take the time to fill out the questionnaire on page 103 and send it in to us at the Freepost address – we really need to know what you think so we can continue to improve the magazine. Thanks.

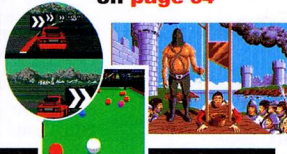
GRAPHICAL BLISS

If you want to make your artistic creations even better, you need to upgrade – we show you how on **page 28**



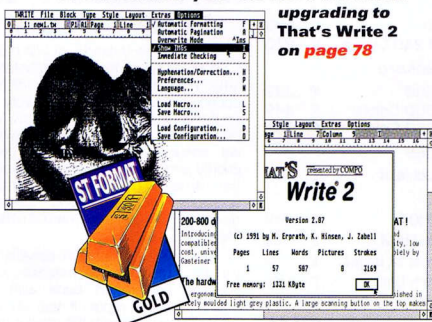
TWO'S COMPANY... THREE'S EVEN BETTER

Check out the best multi-player ST games on **page 34**



BETTER THAN THE FIRST?

The upgrade to That's Write comes to an ST screen near you – we see if it's worth upgrading to That's Write 2 on **page 78**



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Your right to reply is in these pages, then it's the Editor's right to reply...

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Classifieds and the rest.

COVER DISK 45



KEEP ON DRIVIN'

This month's Disk is just incredible – we've got two, yes, that's two, playable demos of brilliant racing games for you.

First up there's **Nigel**

Mansell's Grand Prix so you can get racing around that circuit just like the man himself and we've also got **No Second Prize**. This is a brilliantly speedy racing game which has you sitting on a motorbike leaning into the curves until, well, until you nearly fall off. After you've driven around the circuits you're probably going to want something a little more sedate –



Now you can be a world racing champ in the comfort of your own home.

Patience is just the thing to relax you and we're giving you three games of it: 4-7-11. Prepare to get addicted.



No Second Prize – lean into those curves and just try to stay upright!

Tying in with this month's main feature is a selection of demos with all their source codes – adopt the bits you want and adapt the rest to get coding with the best of them.

There's also an incredibly useful address book, a dictionary for you to add to **Protext** for spell checking and much more.



4-7-11; addictive and absorbing – what more could you possibly want?

Do the Arabesque on page 76.

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Bargains start here in the wonderful world of the Public Domain.
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Puzzle'em-up in Oxyd from the Public Domain.



TURN TO PAGE 20 FOR FULL DETAILS!

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- Available as a stand alone unit, an upgrade to Data-Pulse(Plus) or as a combination unit with Hard drives. 2Mb Floptical diskette included with every drive.

21Mb Floptical Drive	£ 399.99
Datapulse upgrade	£ 299.99
21Mb 3.5" Floptical Disk	£ 24.99

STE Packs

520 STE Discovery Xtra	£219
1Mb STE	£229
2Mb STE	£275
4Mb STE	£329
1040STE Curriculum 2	£289

Falcon 030

- 16MHz 32 bit 68030 Central Processor, 16MHz Blitter.
- 32 MHz 56001 Digital Signal Processor.
- 144Mb 3.5" Floppy, up to 14Mb RAM.
- Displays 65536 colours from 262144 palette at 768 x 480 resolution.
- 8 Channel, 16 bit, higher than CD quality, stereo sound sampling.
- Multi TOS MultiTasking Operating System.

FALCON 1Mb No HD	£ 479
FALCON 4Mb 65Mb HD	£ 879

Budget Hard drives

Limited Offer Bargain basement hard drives based on a GEsoft controller and 42Mb Quantum Mechanism. The Hard drive has no on board clock and is not compatible with an Atari Laser but will daisy chain to any existing Data-Pulse Plus drive. This is an ideal low cost introduction to Hard Drive.

42Mb Budget Drive	£249.99
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Printers

Star	
Star LC100 Colour	£ 165
Star LC20	£ 124
Star LC24/100	£ 179
Star LC24/200 colour	£ 259
All Star Dot Matrix printers include 12 months on site warranty.	

Starjet SJ48 Bubblejet	£ 210
SJ48 Sheetfeeder	£ 69

Citizen

Citizen 120D+	£ 119
Citizen Swift 240 Colour	£ 270

Hewlett Packard

HP Deskjet 500	£ 339
HP Deskjet 500 Colour	£ 449
HP Deskjet 550 Colour	£ 580

Triumph Adler

JPR7825 Bubblejet	£ 224
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Lasers

Seikosha OP104	£ 549
Seikosha 1Mb RAM	£ 69
Seikosha Toner (2 units)	£ 19
Seikosha Drum Unit	£ 79
Ricoh LP1200	£ 759

Add £3 for Centronics cable and £5 for next working day courier delivery.

Monitors

Atari SC1435	£ 179.99
The SC1435 comes complete with cable and tilt/swivel stand.	
Philips 8833MKII	£ 229.99
Includes 12 months on site warranty and free Lotus Turbo charge II.	
Philips 15" FSTV	£ 229.99
Philips 15" Cube Teletext	£ 259.99
• SCART input TV	
• Fastext teletext	
8833 MKII-ST cable	£ 9.99
Philips SCART to ST	£ 9.99

ST Networks

Datanet Network Hardware

- Cartridge based high speed network solution.
- Compatible with ST(F)M, Mega ST, STE, Mega STE.
- Connects via Coax and BNC connectors.

Powernet Network Software

- MultiTasking Network software allows applications to run on the server while drive and printer accesses take place in the background.
- Allows the mixing of Network types, ie DataNet, LanNet and MidNet devices.
- Full Falcon compatibility using LanNet device.
- Ethernet compatibility and E-Mail coming soon.

DataNet with PowerNet	£ 99.99
LanNet with PowerNet	£ 89.99
MidNet with PowerNet	£ 59.99

Aries Upgrades

- Will fit any ST(F)M or Mega ST. Solder in design for higher reliability.
- Extremely compact in house designed Multi-Layer circuit board, smaller than a credit card. Upgradeable in stages from the base 512K to 2Mb then 4Mb.
- All Aries RAM upgrade boards come packaged in a 10 capacity disk box, complete with full fitting instructions and memory test software.

512K Board	£ 39.99
2Mb Board	£ 79.99
4Mb Board	£ 129.99
512K SIMM's STE	£ 9.99
2Mb SIMM's STE	£ 49.99
4Mb SIMM's	£ 94.99
2XSIPP to SIMM adaptors	£ 3.00

Repair Services

Our Service department can repair ST's in minimum time at competitive rates. We can arrange for fully insured, courier pickup and return delivery of your machine to ensure it's safety. We even have a same day service which will ensure your machine is given priority and subject to fault, completed the same day. We can fit memory upgrades, PC Emulators, Security devices, ROM upgrades, hard drives to Mega STE's etc.

We offer a Quotation service for £15 for which we will examine your machine and report back with an exact price for repair. If you do not wish to go ahead with the repairs then just pay the £15. However if you do go ahead then the charge is included in the minimum charge.

Please note: The minimum charge covers labour, any extra parts are chargeable.

Quotation	£ 15.00
Minimum repair charge	£ 35.25
Same day service	£ 15.00
STFME PSU	£ 39.99
1Mb Internal drive	£ 39.99
TOS 2.06 + Switch STFME	£ 65.00
TOS 2.06 + Switch STE	£ 65.00
Courier Pickup	£ 11.00
Courier return	£ 7.00

GI Brush Mouse

"The Natural way to draw"

- 240Dpi resolution.
- Opto/Mechanical mechanism.
- 500mm/SEC tracking speed.
- Switchable between ST/Amiga.
- Direct Mouse replacement.

GI Brush Mouse	£ 19.99
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Mice

Golden Image Mouse £ 14.99
The Golden Image Mouse was recently given an Amiga Format Gold Award with 90% and offers 290 Dpi resolution, 2 high quality microswitched buttons and a free mouse mat.

Optical Mouse £ 24.99

The Golden Image Optical Mouse is a high quality, 3 button, replacement mouse. The fully Optical mechanism means no moving parts offering far higher reliability, includes Mat.

Jin Mouse £ 7.99

Don't be deceived by the low price of this mouse. Mass production of the Jin mouse has resulted in a high quality Opto/Mechanical mouse featuring 290 Dpi resolution.

Ladbroke's Mouse mat £ 2.98

Please add £2 for P&P on mice.

Floppy Drives

- 720K formatted capacity.
- Double sided, Double density.
- Daisy Chain Through port for compatibility with older ST(M) machines.
- External Power Supply.
- Attractive case design.

GI External drive	£ 54.99
ST Internal drive	£ 44.99

Hand Scanners

- 100,200,300,400 Dpi resolutions.
- 1 letter mode, 3 photo modes.
- 105mm scanning head.
- Includes the excellent MIGRAPH TOUCH UP 1.8. This is the full package with manual.
- Includes DELUXE PAINT ST, full package with animation and manual. One of the best available art packages for the ST.
- MIGRAPH's OCR Package available as an Upgrade to all Golden Image Scanner Owners.

Golden Image Scanner	£ 119.99
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Silhouette

- Autotraces bit image graphics to resolution independant vector graphics.
- Produces Beziers, B-Splines. High resolution grey scales.
- Imports IMG, DEGAS, TINY, MacPaint, GEM, SGF files.
- Exports IMG, GEM(13), SGF, DXF, EPS(Postscript) files.
- Requires 1Mb ST, Hi-res monitor.

Silhouette	£ 60
Calamus CVG support coming soon.	

FALCON PHOTO-CD



PAULA RICHARDS

You could soon be taking your holiday snaps, then bringing them home to show off to your family and friends on your Falcon's screen – and all in a stunning more-than-16 million colours in brilliant high resolution.

Photo-CD is a new concept that's been developed by Kodak to bring photographs to your screen and, as well as being an excellent way to view your most embarrassing moments in the sun, it could also change the face of desktop publishing applications. *ST FORMAT* were at the initial meeting between Kodak and Atari UK at the beginning of February – Kodak hadn't seen the capabilities of the Falcon, nor had Atari seen Photo-CD in action, but with some specially written software the Falcon and Photo-CD were merged with very impressive results, both in terms of the quality of the image and for the possibilities for the future it unfolds. At the moment, if you want to incorporate photographs into a document, you have to send the document to a repro house where the photographs are scanned in – this can cost hundreds of pounds; exactly how much depends how many scans you want to incorporate. With Photo-CD, however, you can just import your photographs

directly into your document from the CD-ROM drive; the results are stunning and the cost is much lower. Although there is an initial hardware outlay for the CD-ROM drive, prices start at around £300 and are likely to come down as more people are made aware of what it can do. Alternatively you could view your photographs on a TV with SCART input using a Kodak Photo-CD player, costing around £400.

Acquiring your own Photo-CD is also a simple process; you can just take your exposed 35mm film down to your local photo finishers – most High Street photographic outlets – and ask for your film to be returned to you on a Photo-CD – they can oblige for £17 for 24 exposures. At home you insert the disc into your CD-ROM drive and can view the photographs on your Falcon in a variety of resolutions. It's simple, cheap and looks incredible. You need to ensure you have a multi-session CD-ROM, however, as the standard CD-ROMs are designed to search for just one index and ignore all but the first. You can take your CD back to the photo finishers along with another film – up to 100 images – and have them add these photos to your original CD. The multi-session CD-ROM acknowledges that there are several indexes and you can choose which you want to view.

Talks are under way about the software that can be developed to take advantage of the potential of both the Falcon and Photo-CD in tandem. The programs

are likely to have similar capabilities as those already developed for Macs and PCs – select and display multiple images, rotate and flip, export images to a variety of formats, copy, cut and paste images to other applications, as well as the ability to view and crop low res images then export the high res images with all changes intact. Video-tilting and retouching applications are also likely to emerge.

At the moment clip art libraries are the main source of copyright-free images for you to put into your own documents. With the advent of Photo-CD, however, discs containing stock images will be available – more and more developers are becoming interested in the concept, and as the use of CDs for purposes other than listening to music becomes more widespread, you can be sure that there will be an increasing number of discs coming on to the market.

For additional information, contact Herald Communications on ☎ 071 222 8515.



■ Photography in the 21st Century? No, the Photo-CD's for real. This little beauty enables you to capture up to 100 photographs on one single CD.

DIFFERENT RESOLUTIONS

Photo-CD might seem like magic, but it's not – there's actually a very simple, but clever, explanation. Each exposure is scanned at a very high resolution of 2,000 by 3,000 pixels to create an 18MByte 24-bit file. This means that a 600MByte CD can only hold around 33 images – not really very many. To get around this, each image is encoded into five different resolutions in an image pack just 4.5MBytes in size using highly efficient data compression routines – this improves the response time for retrieval and enables around 100 images to be stored on a single Photo-CD. The software we saw for the Falcon can access the four lower ones – the highest is stored in an 18MByte file. Base x 16 has a resolution of 2,048 lines by 3,072 pixels and you'd use that for final printing or enlargement. The high-

est resolution the Falcon can access is that for High Definition TVs, base x 4 – 1,024 lines by 1,536 pixels. High Definition televisions are expected to become the standard in the next ten years and have double the resolution of standard TVs. You could work with DTP applications quite happily at this resolution. The base level is the present TV resolution – 512 lines by 768 pixels – you could show off your photographs at this level. The final two are both thumbnails – a quarter of base level (256 lines by 384 pixels) and a sixteenth of base level (128 lines by 192 pixels) – these thumbnail images can be displayed on-screen as a visual index of the files on the Photo-CD, double-click on the thumbnail of the picture you want to see and up it is displayed in full screen mode. Works like magic.

SNIPPETS

D2D-Edit now available

D2D System's direct to hard drive recording software for the Falcon is now available for £150. D2D-Edit features a full suite of direct to disk recording and editing software consisting of 16-bit 50KHz stereo sampling, non-destructive cut, paste and copy options, a MIDI time-code driven cue sheet and the ability to set markers while recording. For additional information, call D2D Systems direct on ☎ 0223 420252 or fax them on 0223 421096.

Easy as 1,2,3

Kuma launch another book; this time it's *Spreadsheets Made Simple* (£12.95), a step-by-step guide to getting the most out of your spreadsheet using examples. The book is relevant to spreadsheets on all machines, so if you are completely baffled by your rows and columns, give Kuma a ring on ☎ 0734 844335.

Language upgrade

Academic Software have released updated and revamped versions of their *ST-Vocab* and *Verbmaster* programs. The new versions feature extended printer drivers and support, improved disk management, an improved file selector, hard drive support and keyboard shortcuts for all main options.

Both *Verbmaster* and *ST-Vocab* run on all ST and TT systems and cost £14.99 each; upgrades from the older versions are £4.99 each. Contact Academic Software on ☎ 0296 82524 for more details and ask them for your free demo disk.

More monitors

Get a converted mono VGA monitor from System Solutions (☎ 0753 832212); they have an excellent mono monitor with a speaker available for £149.95 and one without any sound at all for £129.95.

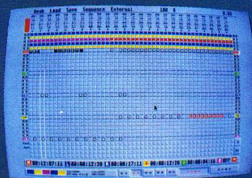
Switched on TOS

Analogue Computers (☎ 081 546 9575) are developing a range of peripherals and they have just announced the arrival of their first items. These include a high resolution paper white monitor with tilt and swivel base (£129.95), a plug-in TOS Switcher for the STE (£19.95 until the end of April) and an STFM TOS switcher which needs a little bit of soldering to install (£29.95).

VIRTUAL VISION

Controlling it all

This is the control screen of Virtual Vision on the TT monitor. The system is designed to be operated in the same way as a MIDI sequencer,



with each square on the screen representing one still frame of video. Each of the five LVA discs can hold over 32,000 frames of video which can be accessed and displayed instantly either as a single frame or a series of frames. The beauty of the system is that a frame from any disc can be aligned to be displayed at exactly the same time as a key frame on any other disc. MIDI events and digitised sound samples can also be triggered at the same moment for added theatrical impact.

BY CLIVE PARKER

Virtual Vision of London have developed an amazing new audio-visual interactive presentation, editing and sequencing system based around the TT. The system enables up to five broadcast quality Sony LVA optical video

disc machines to be accessed and controlled in real-time and synchronised with multi-track audio tape systems and MIDI instruments.

The system was demonstrated at the Victoria and Albert Museum as part of the Olympic Exhibition. The Virtual Vision show consists of an arc of five projection televisions displaying the output of

System capabilities

Non-destructive real-time editing and mixing on a maximum of five video tracks.

Over 120 minutes of broadcast video accessed at 125 events per second.

Panoramic five screen output.

Parallel Systems Editing (PSE) enabling computers to talk to each other.

Video Disc manipulation enables search, pre-roll and edit

functions to be performed instantaneously.

Virtual Track Environment - MIDI used to control synchronisation; MIDI time code, MSP and SMPTE simultaneously with MIDI track information providing EDLs (Edit Decision Lists) on a track by track basis.

Virtual Tracking - Video sequence editing is almost exactly the same as MIDI sequencing and, as such, is as easy to use.

DESKTOP VIDEO EDITING

BY CLIVE PARKER

True Desktop video editing is here for the ST and Falcon at an affordable price. *Editman Super* has been developed by Syntrox of Derby and is an ST-controlled video editing system. You need at least two Super VHS video recorders with sophisticated features such as jog-shuttle, perfect freeze frame and slow motion to use the system. It is called *Editman Super* because it is designed for use with Super VHS.

Syntrox take the practical view that computers are tools that can be used to control existing video editing equipment rather

than being simply a device to grab video imagery and process it internally. *Editman Super* consists of an interface box and software with the hardware being available in several versions, the basic unit can be traded in for more powerful units when required.

The main editing screen looks rather like a MIDI sequencer with standard tape transport control, and is just as easy to use. The source or destination video can be selected by a button above the transport controls and operated as if by a hand-held remote control, only with a great deal more precision. Details of tape movement are displayed on a real-time counter on your ST's monitor, along with

details of the start and end points of a clip and its duration in time.

You can run back and forth through a video tape selecting the sections you want to be transferred, marking the start frame and the end frame of each clip you wish to transfer (cut and paste) to your final edit. A script file of all the clips required from the source video tape is built up and stored. The system is then started and the first clip is found, a five second pre-roll started and the first clip is transferred. The program then moves to the next clip required, sets the pre-roll and transfers that. This system completely bypasses the traditional method of setting up each edit by hand and recording

it. The editor can now set up his script file during the morning and set it to perform the transfer while he goes to lunch.

Because the editing sequence has been stored as a script file by the ST, the editing can be exactly repeated at a later date, in effect a new master can be created from a source video avoiding loss of quality when making copies from a master. If a customer wants something added or removed from the tape, the script file can be edited at will in the same way as a word processor document. Script files can be set up to import ST-generated titles and animations as well as video. Difficult editing processes such as audio and video insert are



■ *Editman Super* showing the main working screen of the A/B Roll three machine editing software. Although this screenshot was taken from the PC version, the ST and Falcon screens are going to be identical in every detail.

All those features

Audio insert - non-destructive.

Automatic five second pre-roll.

Can be used with other video hardware to produce fades, wipes, picture-in-picture and other effects.

Combined audio and video insert. Import still graphics and animations into videos.

Jog-shuttle controlled by software.

On-screen tape transport controls.

No SMPTE required.

Option for two video sources to be edited at once.

Optional genlocking for titles.

Script files can be created for automated semi-intelligent editing.

Auto detection of video equipment.

Source and destination videos synchronised and controlled by ST.

Video insert.

Video timing on ST monitor in hours, minutes, seconds and frames.

the LVA disc players simultaneously on a 35 foot wide panoramic curved screen, while the audio output comes out of a four dimensional sound system. The sound system is similar in concept to the high-fidelity quadrophonic systems of the '70s, but updated with the latest audio technology to enable sound to be placed accurately so that it appears to be generated from any point in the arena between the four speakers.

All the software is written entirely in GFA Basic 3.6 and is

loaded and run directly from the interpreter, not compiled into a standalone program. That means the software is potentially able to be run on any ST, although you would actually need at least a Mega STE because you need multiple serial ports to control the LVA disc machines.

One of the innovations to be added to the system is laser projectors. These enable you to have large scale displays outdoors – even in daylight. Powerful targeting lasers from ex-Soviet MIG

fighter-bombers are being adapted for this purpose generating images hundreds of feet high.

The system is not cheap, however; the setup we saw at the V and A comes in at about £150,000, although compared with traditional professional video editing methods this is chicken feed. Virtual Vision can be hired for shows, demonstrations and presentation purposes. Virtual Vision can be contacted at PSI plc, call 071 937 9801 or fax 071 581 4445 for more information on prices and availability.

SNIPPETS

The Accompanist

If you have a copy of the disks that came with the book, *The Best of ST FORMAT* (and if not, why not? To order your copy turn to page 80) and you want to register for the full version of *The Accompanist*, you need the address of the programmer so you can send him his £10. We inadvertently left off the disk, so here it is now: Henry Cosh, 31 Dukeswood, Crowthorne, Berks RG11 6NF.

Falcon US software

There is no official news yet on the contents of the software bundle to be supplied with UK Falcon030s. However, we have managed to obtain the contents of the US bundle, this should be available now:

- **Atari Works** integrated productivity software – a combined word processor, spreadsheet and database package.
- **Audio Fun Machine**, a DSP sound effects processor with built-in graphic equalizer.
- **Breakout**, a Desk Accessory Game
- **Calappt**, short for calendar/appointment book, a "Personal Time Manager."
- **FalconD2D**, a cut down version of the direct-to-disk recording and effects software from D2D Systems.
- **Landmines**, a Desk Accessory Game.
- **MultiTOS**, Atari's all-singing, multi-tasking operating system.
- **Procalc**, a professional calculator
- **SpeedoDOS** with 14 Bitstream Speedo fonts, latest GDOS replacement.
- **System Audio Manager**, a utility that replaces system events and key clicks with digitized sounds.
- **Talking Clock**, a clock which talks at pre-determined times.

This software bundle is to be provided with machines with hard drives, machines without hard drives will not have *FalconD2D*, *Atari Works* and *SpeedoDOS* although they will be available separately.

Total recall

Ladbroke Computing International, have SIMMs available at reduced prices. Contact them on 0772 203166 for details. Also available from Ladbroke at a hugely reduced price is *MIDistudio Master* (reviewed in *STF 30*, *STF Rating*: 91%). Was £99.99, is now £19.99.

WHAT'S IT FOR?

The basis of the Virtual Vision system is to provide real-time non-destructive video editing at broadcast quality standards. With Virtual Vision, all the visual information can be stored on a video disk in any order and then be sequenced together in a matter of hours or days. Normal linear video editing, however, consists of hundreds of hours of shuttling backwards and forwards through video tape to find the exact sequences required and then transfer them to another tape. We saw an Olympic Flame demo which was just over six minutes long and was edited in four and a half days. A video of this length and quality created using traditional methods typically takes

about six weeks to be edited. This is five screens we are talking about, not just one. This system is being considered for TV adverts for Coca-Cola to be broadcast in Europe. All the filming can be completed and transferred to video disc along with a soundtrack for each language. The advert for each country can be individually created from the same visual data on the laser disc and the sequenced data saved. The adverts don't even have to be the same, the UK version could have shots of London, the French version Paris. Each broadcaster can then be supplied with an identical video disc and a floppy containing the sequence relevant to his language.

made simple by *Editman*. Audio insert is another name for audio dubbing, laying another sound-track over or alongside the original. This could be title music, background music during a wedding video or even sound effects from another audio source. Video insert is a much more difficult operation, this is laying down new video material over the destination tape. Using *Editman* this process is almost completely automated. The start frame for the insert is selected on the destination video along with the duration of the insert, you may want to replace a five second and eight frame scene with something else, perhaps a close-up of the subject's face during a wedding. You then select the start frame of the edit on the source video and start the insert, both machines operate in sync and stop when the clip is recorded. Video insert does not affect the original sound track.

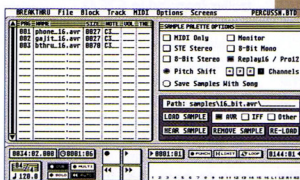
Editman Super is probably the first true Desktop video editing system available at a reasonable price, and is just the basis of a complete range of competitively priced equipment – in comparison professional systems cost thousands of pounds more. The *ST* software should be finished by now, and a Falcon version of the software is being developed. Give Syntrox a ring on 0332 298422 for more details of the *Editman Super* range. The EX 300 two video version costs £399, while the more sophisticated three machine A/B Roll system costs £599.

Another Gajits Breakthru

Gajits are releasing a video manual to *Sequencer One* and *Sequencer One Plus*. The video consists of ten lessons guiding you from first basic steps through to recording, editing and arranging your music.

Breakthru is a new music sequencer with 64 tracks, score editing screen, drum editing, a grid editor, a song arranger, a juke box feature and Gajits' Diamond Drag™ note editing system. It can play back 16-bit sound samples through the Microdeal Replay 16 sampler at the same time as playing MIDI devices. There is also a *Plus* version supplied with extra hardware to provide an extra MIDI out socket and the software supports 32 MIDI

channels instead of the standard 16. *Breakthru* costs £129.95 and *Breakthru Plus* is £159.95. For further information call Gajits on 061 236 2515.



■ The sample sequencer in *Breakthru* from Gajits. It can play digitized sound samples at the same time as a MIDI instrument.

D-DAY

On 6 June 1944, General Eisenhower pitched the combined Allied forces against Hitler's Fortress Europe. Now you too can relive that fateful day thanks to *US Gold*. *D-Day* is a strategy/war game with four different simulations covering seven increasingly complex missions. Each simulation tackles a certain area of the Allied assault – bomber raids, parachute landings, tank battles and infantry combat.

The action takes place over 144 locations, with 129 of these being controlled by you. To suc-

ceed you must take part in at least 100 of these missions in each of the four simulations, your ultimate aim being to progress through the ranks from soldier to the ultimate accolade, general.

D-Day is released by *US Gold* at the end of March, ETBA. Call 021 625 3366 for information.



■ Carruthers' valiant attempt to land inconspicuously behind enemy lines was ruined by the great big arrow his mother had sown into his parachute.

IMPRESSIVE STUFF

Hot on the heels of Caesar and Paladin 2, Impressions are set to release two new war/strategy sims on your ST. We managed to track them down

When Two Worlds War

When Two Worlds War finds you in control of a planet on the verge of intergalactic conflict, your aim being to destroy your enemy's war machine before he destroys yours. The action takes place both on planet and in space with you or your ST controlling various vehicles to achieve mission objectives. As well as battle sequences, you also have to manage your planet's resources and make sure the war effort goes according to plan.

The game enables you to generate your own planets, customise your armies and create your own warring civilisations. You can also design vehicles to certain specifications including armour, radar, space travel and firepower.

When Two Worlds War is released on the ST in March, price ETBA.

Rules of Engagement 2

If When Two Worlds War wasn't enough, Impressions are also releasing another space combat sim in the form of Rules of Engagement 2.

This time around you're cast in the role of Fleet Commander in a series of intergalactic campaigns whose task is to defeat enemy aliens and help various planetary outposts prosper. A large part of the game is taken up with dealing with your Fleet's captains, who each have distinctive personality traits which you can define.

One of the main features of the game is the ability to create your own campaigns, spaceships, fleets and aliens. It's possible to build up a fleet, for example, from many different specifications of ship and battle with many different forms of alien.

During the game you can instruct ships to carry cargo to locations around the galaxy, or even tow other damaged vessels. You can also use the auto-fire option for selected targets.

Rule of Engagement 2 is provisionally scheduled for release in April, price ETBA. Further information about both games can be obtained from Impressions on 071 351 2133.



■ Lada's new wonder car is aimed at the cost-conscious Russian and comes with a 20mm cannon and a food shortage detector.

■ Invest in a copy of Rules of Engagement and you can send in your own digitised pic to be included in a personalised copy of the game.



LLAMAZAP FOR THE FALCON

Llamasoft's Jeff Minter has virtually completed work on his first shoot-'em-up for the Falcon.

Llamazap is a synthesis of Jeff's previous games for the ST – such as *Defender 2*, *Revenge of the Mutant Camels* and *Llamatron* – and looks set to take the Falcon by storm when it's eventually

released. The game makes use of Atari's new 21 button joystick controller featured in STF 43.

Although Atari are reluctant to give release details yet, STF understands the game will be released in March to coincide with the launch of the Falcon in the UK.

Don't miss our feature on Jeff Minter and Llamazap in next month's issue of *ST FORMAT* – turn to page 106 to secure your copy now!

■ When you're not shooting mutant camels, Llamazap also enables you to take pot shots at cows and rescue dolphins.



STF CALAMUS OFFER

Halco are offering their top-of-the-range DTP programs *Calamus SL* and *Calamus S* at a specially reduced price exclusively for *ST FORMAT* readers. Using the form printed below you can order *Calamus SL* for £500 instead of £587, or you can order *Calamus S* for just £285, it normally costs £334.88. Halco can only supply the programs at these prices if you use this form or a photocopy. Watch out for our review of *Calamus S* next issue.

Please send me

- ☐ copies of *Calamus S* at £285 plus £4.50 p&p Total £289.50
☐ copies of *Calamus SL* at £500 plus £4.50 p&p Total £504.50

I enclose a cheque for £_____ made out to Halco Sunbury Co Ltd

or debit my Access or Visa card number _____

Name _____

Address _____

Postcode _____ Daytime telephone number _____

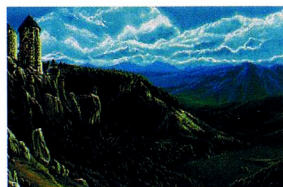
Post this coupon to Halco Sunbury Co Ltd, Unit 4, Headley Park 9, Woodley, Reading, Berks RG5 4SQ

Please tick here if you do not wish to receive direct mail from other companies ☐

OCEAN SIGN UP POPULOUS

Electronic Arts have recently announced plans to release their back catalogue through Ocean's budget Hit Squad label.

Titles to be released in April and May include *Populous* which is going to be bundled with the *Promised Lands* data disk, *Strike Fleet*, *The Immortal* and *Hard Nova*. All titles will cost between £7.99 and £14.99 each. For additional information on this compilation and any others that Ocean are planning, contact Hit Squad phoneline on 061 832 6633.



■ "Look what they've done to the Bullring, Maureen." "I know, Barry, it's amazing what those urban redevelopment grants can do."

ISHAR 2: MESSENGERS OF DOOM

With the evil Krogh defeated, the land of Ishar lives in peace and harmony. However, beyond its shores an evil syndicate is subjugating the local population with mind-altering drugs. The question is, how long is it going to be before the syndicate turns its attention on Ishar itself?

Ishar 2: The Messengers of Doom is the sequel to the role-playing game, *Ishar: Legend of the Fortress* and is to be released on both ST and Falcon formats in May, price £29.99.

Gameplay takes place over seven islands with different landscapes, including swamps, mountains and dungeons, making the overall playing area three times larger than the original adventure. Townscapes have been enlarged to include opportunities for trade, banking, information-gathering and the ability to meet over 30 new characters. There are also 70 new enemies to contend with.

Other improvements on the original game include better character psychology and the ability to save the game at any point without having to pay for it.

The ST version of *Ishar 2* features requires 1MByte of RAM, while the Falcon version features 256 colours and uses 2MBytes of RAM. The original version of *Ishar* is to be released on the Falcon in May. Call Daze on 071 328 2762.



■ "As Hendryx struggled through the tangled overgrowth, a strange realisation dawned upon him. There's nothing here but fog and cobwebs." Extract from *Journeys into the Mind: A Portrait of John Gummer*.

• The Bitmap Brothers •

THE CHAOS ENGINE



• TIME FOR CHAOS •



Atari ST (STE Enhanced), 1Meg Amiga & PC • 1 or 2 Player
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Tel: 071 481 9214 • Fax: 071 480 5690



CONTINUED AFTER THIS PROGRAM

In an attempt to learn programming by osmosis, Chris Lloyd, Clive Parker and Rob Mead have immersed themselves in a bath of disks

DIVERSE DISCOURSES

There is a wide range of languages available for your ST and choosing the right one to suit your needs is the single most important aspect of programming. Struggling with a complicated or inappropriate language and getting nowhere fast is going to put a dampener on your programming projects more quickly than a missing <E> key. Like every skill worth its salt, you need to put the effort in first, so don't expect any overnight sensations. They just don't happen. Generally speaking,

the easier it is to learn a language, then the less powerful it is. If you intend to get serious about things and plan to produce fast quality arcade games, then there's no real substitute for assembler language. Nothing can run your system as fast as a good piece of assembler code. It accesses the hardware at a very low level squeezing the most out of your ST.

If you're not a complete speed freak, then you open up a much wider choice. The more powerful the lan-

guage, the better the potential results and the worse the potential problems. If you plan to use your programs on other machines, then C or Pascal are obvious choices, since the source code can be compiled and run on other machines as long as you avoid ST-specific functions – like GEM. C can be a frustrating experience to learn but is capable of creating serious applications, like operating systems. Pascal is easier to learn with much more readable code, but it's not as fast or flexible as C.

By far the easiest language to learn is BASIC. You can get programs typed in and running relatively quickly

without having any detailed knowledge. They are also the slowest and, if you plan to write speed intensive programs, it can get limiting. If you've never programmed before, you are well advised to cut your teeth on a spot of BASIC first. Although it lacks raw power, it is adequate for starters and can produce impressive results moderately easily.

Programming languages of all types are also available in the Public Domain. You can get your hands on Common LISP, a language developed in 1959, as well as the practically unknown Scheme. Check out our Public Domain section starting on page 88.

PROGRAM YOUR WAY TO THE TOP

There's no better way of learning how to program than by taking the advice of someone who's already doing it. We asked some of the UK's top programmers how they got into the programming business



**STEVE TURNER,
GRAFTGOLD**

How did you get started in programming?

"I had formal training in the Civil Service years and years ago, but I taught myself how to program assembler on the Spectrum."

Why did you start?

"When I was at school we had one of the very first computer types in a little computer club and all we could do was key in a few numbers and get an answer out on a teletype machine. But it was so exciting getting a machine to respond to you, that I was immediately hooked from the age of 15."

What languages have you used?

"FORTRAN, COBOL, BASIC, ALGOL, 68000, 8086, Z80 and 6502."

Why did you do it?

"It's the joy of seeing something working... you get this terrific thrill when the thing that you program

actually works on-screen."

Have you got any advice for potential programmers?

"Generally speaking – and this is typical of the industry – it's very hard for someone without experience to get into a company. It's down to the person to show, not only that they can program in a language, but they can hold a big project together in their head – programming a little routine to put something up on-screen is completely different from programming a whole game."

"If anyone is trying to get a job, I would advise you to get a good demo together to send to people, you should never apply and say 'Well, I can just do this.' You've got to prove yourself."



**KEVIN BULMER,
DIMENSION
CREATIVE DESIGNS**

How did you get started in programming?

"I went out the day after my birthday and bought a ZX81 and a 16K RAM pack and wrote a *Dungeons and Dragons* character editor in BASIC."

Why did you start?

"Because there weren't many programs available at the time on the ZX81, there was next to nothing that you could get – you certainly

couldn't get something like a character designer for *Dungeons and Dragons*, and it was so number intensive it was obvious you wanted to do it on a computer. It was purely a utility I developed for myself, but in the end myself and a few of my friends used it, because we all played *Dungeons and Dragons* and we all had ZX81s or black and white Spectrum computers."

What languages have you used?

"BASIC, C, MODULA 2 and 68000 assembly language. BASIC gives you a good grounding really, it gets you thinking the way the machine thinks and sorting out the bugs. It's a very easy system to work with. If you do get a problem, then you see it instantly and it's very easy to fix, whereas with a compiled or an assembled language, it's a bit of a problem – it just slows things down a bit for a learner, makes it a bit more immediate with an interpretive language like BASIC."

Why do you do it?

"It's a challenge."

Have you got any advice for potential programmers?

"If you want to do programming from a games point of view, there's nowhere to go to that I'd recommend to learn programming in assembly language. Having said that, a good understanding of

coding in any language – be it Pascal, FORTRAN, C, whatever – it's all really quite portable knowledge if you understand how the computer works, then you can bring that to games programming."

"As with most things in industry, unless you can find a company who's willing to train you – and they're few and far between in this country – the only thing you're going to be able to do is get books and sit in a room until you get somewhere. We've trained people in-house and we are planning to do so again. If somebody's taken the time to show they're trying to do something, that's always a big advantage over someone who turns up cold and says 'teach me how to program.'"



**PETER MOLYNEUX,
BULLFROG**

How did you get started in programming?

"I actually got started really early on with a BBC Acorn Atom. I played around with that for about a year and did absolutely nothing at all, that's how I really got interested in games. The first game I did was like a *Space Invaders* thing. The trouble was I really didn't understand how to program anything apart from in BASIC at that time."

Ever sat back from your ST and said, "I wouldn't have done it like that?" It's easy to criticise a program because it isn't exactly what you want. Why don't you stop talking to your ST and actually have a go at this programming lark yourself?

All you need is the idea for a program, some modest typing skills and time to sit down with your ST and explain how your wonderful program is going to work. It sounds easy enough, but there's a small hurdle. Your ST can't do anything without a detailed set of instructions and, unfortunately, like all computers, your ST can only understand binary. This consists entirely of noughts and ones – not the easiest of languages to deal

with. Thankfully, there are plenty of alternatives. These work by producing the binary code from a series of words or commands that you actually have a chance of learning and understanding.

Your choice of language depends on the kind of program you want to produce and how much blood you want to sweat trying to produce it. At its most basic, the commands are simple mnemonics for the binary commands. Languages, such as assembler, are called low level languages and are the fastest and most complicated. To make programming more accessible, high level languages, like BASIC, were created. These use commands that can represent reams of low level commands. High level lan-

guages are easier to get started on, but aren't as powerful or flexible.

Whichever language you use, the environment is likely to be roughly the same. Programs are typed into an editor. These are then translated into something your ST can understand. There are two types of programs that do this, compilers and interpreters.

Interpreters, like BASIC, convert each line in turn and execute it, then move onto the next line. This slows everything down and the programs can only be run from within the interpreter program. The advantage is that it's easy to track down problems and you can run programs as soon as you've written them. Compilers work by converting the whole program in

one lump. The resulting code is faster and is independent from the language it was written with. It's a lot harder to track down bugs though, and it takes longer to see the actual results. Most interpreted languages also have compilers that convert your finished program and speed them up.

Once you've chosen your language and typed in your first lines of code, you're in danger of catching the programming bug. Using someone else's program is one thing, but producing your own is something else altogether. A bit like the difference between walking around a gallery and actually painting your own pictures. Whatever you end up creating, beware of one fact – it can get addictive. **stf**

Starting with the basics

BASIC – Beginners All Symbolic Instruction Code – was developed to bring programming within reach of mere mortals and not just those very clever types that know how to tell the time in hexadecimal. When the first BASICs appeared, you could only write very crude programs. Things have developed a lot since then, and the latest crop offers sophisticated commands that do hideously complex things using only a line or two of code. There are no standard versions of BASIC and each has a different set of commands and syntax. They range from the complex but comprehensive *HiSoft Basic 2* to the relatively simple *STOS*. If you have never programmed before then it's advisable to start with something accessible like *STOS* or *GFA Basic*.



GFA Basic is a beautiful editor. OK, it doesn't look like much but it's a joy to use. **GFA** makes full use of GEM and has over 350 commands and a manual to match.



XBIOs and **GEMDOS**, this is powerful **BASIC**. *GFA Basic* has all the functions you'd expect. It has an excellent editor with automatic syntax checking and indenting. It lacks the impressive all-in-one commands of *STOS* but it has a more flexible and lower level set of commands. It's the fastest **BASIC** going and another £30 gets you a compiler to give you standalone programs that move even faster. It's got bags of horsepower and potential and isn't too complex to get started on. If you

Why did you start?

"I just wanted to program games. As soon as I saw computers and games I thought, 'Oh wow! This is going to be great.' That's how I really started off with that, and then I went to university – that's the worst possible thing you can do if you want to write games – they teach you how not to program games in a way, although that's useful stuff for the sort of games that we [Bullfrog] do."

What languages have you used?

"Everything from COBOL to FORTRAN, but mainly assembly and C. Certainly on the ST you have to think about going down to assembly level to get the best out of the machine, but now that machines are getting more powerful you can program in high level languages like BASIC and more especially C, which makes life much easier."

What languages did you start with?

"BASIC. Actually, it wasn't really like the BASICs now, in a way they're more like C, they were much slower and more primitive, although the BBC BASIC was very good at the time."

Why do you do it?

"Because I'm a sad individual! I still really enjoy it. I think it's very creative. The biggest reward you can get out of it is to see something you've created actually happen on-

screen. It gives you a real kick."

Have you got any advice for potential programmers?

"The best advice on learning to program is don't pick up a book and read it from cover to cover – that's the worst possible thing you can do. Try by hook or by crook to get some sort of system by somebody which does a sprite draw, opening the screen up and reading a mouse – If you get involved in the hardware level at the early stages, you just get completely demotivated, you get blinded by bits and bytes and hardware registers and god knows what else."

"Set yourself a task, just say 'I want to move a sprite across the screen,' and then just use books for reference and find out how to do that. Otherwise you're trying to learn everything, and to learn about the hardware level of the computer, and to learn how to program games all at once is just too much."



ADRIAN WATERHOUSE, IMAGITEC

How did you get started in programming?

"I applied for a job, basically, I used to program as a hobby and I wrote some demos and things like that. I was 13 when I first started on the Spectrum,

then on the Commodore 64."

Why did you start?

"It's just a hobby that became a job. I actually hate games, I just like making computers do what they're told."

What languages have you used?

"You name it – 68000, 6502, 8086, a little Z80."

Why do you do it?

"I enjoy the challenge."

Have you got any advice for potential programmers?

"Don't do it, the money's crap! If they're serious about it, persevere. Write around to the companies. We get a lot of nicely scrolling demos – the best kind of demo to send to a company is a game, because writing demos is completely different from writing a complete game."



DAVE JONES, DMA DESIGN

How did you get started in programming?

"It probably all started at school. When I was at school the ZX81s first hit the streets in kit form and you could build them up. That's definitely when I really started because I built up a ZX81 and started programming in BASIC."

Why did you start?

"Just the interest really. I actually

found programming computers quite interesting, so I just went out and bought one and tried it."

What languages have you used?

"I started off with BASIC, then I went onto assembly. I did some Pascal at college, a bit of C. I also did quite a bit of MODULA 2 when I was at college."

Why do you do it?

"It's challenging. I find it interesting. You're always trying to write better, more reusable software, or do it faster, so you're always improving. I really don't think somebody could ever sit down and write a piece of code and think that it's finished. You always keep going back to it, trying to better it all the time."

Have you got any advice for potential programmers?

"I wouldn't go straight for assembly, I'd get something like Pascal. It's very good for teaching programming – especially how to program quite neatly – quite well. It's not just a matter of whether you can program or whether you can't. You have to be able to program very neatly and efficiently and Pascal teaches you that, it gives you an idea of how a program works and then go onto assembler for speed and efficiency. Always have a few good reference books by your side."

bought *ST FORMAT* 35, you have it already, 'cos it was on the Cover Disk – if you missed it, turn to page 59 to find out how to get your hands on a copy.

STF RATING: 91%

HISOFT BASIC

PRICE: £79.95

FROM: HISOFT

CONTACT: ☎ 0525 718181

The heavyweight of BASICs, *HiSoft Basic* comes with two enormous manuals and three disks packed with files. There's a resource editor and it offers excellent control over GEM and TOS using comprehensive functions. To make full use of it, you need 1MByte of RAM. It differs from other BASICs in that it's not an interpreter, but a proper compiler. The BASIC is fairly standardised and you can load in other BASICs and run them without too much modification. The editor is an integrated GEM affair. There is a debugger, which sounds nasty but helps track down bugs. It's the most technically complex implementation of BASIC and can be intimidating to start with. If you're into serious application programming, then there is real potential here but you have to dig in deeper and harder to get at it. A BASIC with muscles on its muscles.

STF RATING: 90%

■ *STOS Basic* comes with a whole suite of useful utilities that can be run from the editor. Here's the sprite editor in action... editing a sprite. Marvellous.

STOS BASIC

PRICE: £29.99

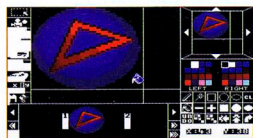
FROM: MANDARIN SOFTWARE

CONTACT: ☎ 0625 859333

Billed as *the* game creator, *STOS Basic* has a slightly different approach with a host of commands geared towards graphics and sound. Tricky things like interrupt driven sprites and sound can be set up in a couple of lines. It ignores GEM completely, using its own routines which are, unfortunately, not nearly as good. Other unique features include memory banks which can be used to store any kind of data and the ability to add extra commands with extensions.

The BASIC commands used are often idiosyncratic and programs can be difficult to convert to other languages. A compiler is available for an extra £20.99. *STOS Basic* is pitched at an easier level than most BASICs, and although it's a little slow and clumsy at times, you can stay well away from horribly complex techy stuff and still do whizzo things. An excellent starting point.

STF RATING: 85%



Can you see it?

C is the imaginatively titled language developed from, er, B. Developed by Dennis Ritchie, it's a fairly new language already with a bit of a cult following. It was designed to be portable, yet still address the hardware at a low level language. The code is efficient and highly structured. It's also a bit of a pig to read and can be terribly confusing at first. The syntax is often obscure and the learning curve can be steep. Once you've mastered it, you're laughing – it's the next best thing to assembler with the advantage of being portable and more flexible. Operating systems are often written in C; UNIX and your ST's GEM being two for starters. If you are new to C, or of a nervous disposition, then *HiSoft's C Interpreter* is worth checking out. Heavyweight C compilers are a daunting sight indeed.

LATTICE C

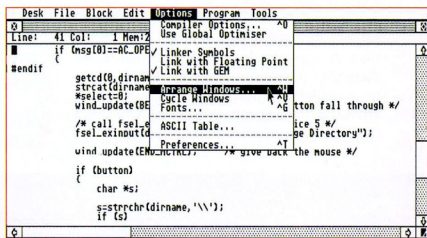
PRICE: £149

FROM: HISOFT

CONTACT: ☎ 0525 718181



■ The integrated GEM editor for *Lattice C* lacks in C-specific editing functions but enables you to access all the compiler, debugger, linker and librarian options from menus. You can run compiled programs and tools too. Now, that's integrated!



100 options for the two-stage compiler and optimiser to fiddle with. The finished code is compact and very fast. It comes complete with a resource construction kit, low level debugger, assembler and all sorts of extras on its seven disks. Although you can run it on a 512K ST, you do so with a bit of a struggle. You really need 1MByte and two disk drives or a hard drive to get the most out of it.

As expected, there are massive libraries covering all the

DON'T CALL US, WE'LL CALL YOU

OK, so you've done some programming and now you want to get rich. How do you go about it? Here's what some leading software houses and PD libraries had to say

RICHARD EDDY, PR & MARKETING MANAGER, CODEMASTERS

What advice would you give to a programmer who wanted to send a demo to you?

"When you're sending stuff in, treat it as a job application. Don't send a disk with just a scruffy sticky label on it... make sure everything's clearly labelled, send in a letter of introduction, almost a CV. Every bit of paper, every disk, every graphic should have your name, address and, possibly, your telephone number on it. Just think of it as if you were applying for a job – remember you're not just sending in a game demo to a company."

NICK YAPP, DEVELOPMENT MANAGER, ENTERTAINMENT INTERNATIONAL

What happens when someone sends in a program to you?

"What we try to do is look at all the programs that come in and normally make constructive criticisms. One of the problems now is that the time of lone programmers sitting at home cre-

ating brilliant games has virtually disappeared. I think the ST is one of the last machines which that was possible on, because it's quite an open system and it's quite easy to get into – one person can actually know everything they need to know about the ST.

"With the Amiga it's slightly harder, and then above that it starts getting very difficult. We tend to find that with the things that people send in, the graphics are nearly always sub-standard if the programming is good enough and vice-versa.

"Releasing an ST-only game is not something we'd be looking for at the moment, so that's one of the problems you get from somebody sending stuff in. If they're going to produce something for the ST, the Amiga and the PC then it becomes far more interesting from our point of view.

"What you can see from what people have sent in is their technical ability and that's far more interesting to us really, to have a look at either the artwork, the music or the programming. It's not too difficult to assess how good somebody actually is."

NICK FARLOW, 16/32 PDL

What do you look for when you want to add a new program to your library?

"Originally it's the most important thing to look for, even if the coding is slow or maybe it's not

up to the mark on presentation. If it's original it goes in the library. Originality is the single most important thing."

JOHN CRAIG, RIVERDENE PDL

What do you look for when you want to add a new program to your library?

"We are rather keen on originality if we can get it. That is becoming more and more difficult, obviously, because there are only so many databases and so many word processing packages, and so on, that can be written. Having said that though, on the utilities side there are some phenomenal, interesting bits and pieces coming along at the moment.

"For instance, we've just become the sole distributors for a guitar-playing package, to teach beginners how to play the guitar – amazingly simple it works extremely well.

"The idea is to show you the finger positions for a particular chord on the guitar, you can even tune the guitar on an Atari ST – those are the kind of innovative ideas we are looking for. Things like that are tremendous, ten out of ten.

"We don't take demos now with well-known music on them, because of copyright problems... we do not accept it unless the person who has written the program or sampled the music can give us an assurance that the copyright has been cleared."

operating system functions as well as ANSI and UNIX ones. There's support for CPXs, maths libraries for the Mega STE and TT and support for the whole Motorola family up to 68040s. A very meaty package that makes no provision for beginners. If this is your first taste of programming, you're likely to start gibbering. Once you know what's what though, it's a very powerful and, considering its complexity, easy to use system.

STF RATING: 90%

C INTERPRETER

PRICE: £59.95

FROM: HISOFT

CONTACT: ☎ 0525 718181

Coming to the rescue of those who find a full-blown C compiler too much is HiSoft's *C Interpreter*. It works the same way as a BASIC interpreter – you can type in your programs and run them straight away. It's quicker and a damn sight easier to track down bugs, you can even step through programs line by line. It's an ideal way to learn, and seasoned programmers can quickly develop code before transporting it across to a full blown compiler. There's built-in help and tutorials to get you going. There are libraries of over 460 ANSI, UNIX, GEM and DOS functions. It doesn't have the punch of the professional compilers but it's as painless an introduction to C programming as you can get.

STF RATING: 83%

PROSPERO C

PRICE: £102.12

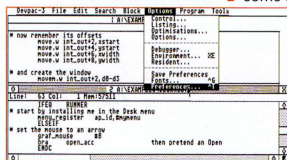
FROM: PROSPERO

CONTACT: ☎ 081 7418531

A complete implementation of ANSI standard C with comprehensive AES and VDI libraries as well as the standard ANSI ones. *Prospero C* uses an integrated GEM editor enabling you to get at most of the options and functions that are available. There's a symbolic debugger and also a syntax checker. It's not as comprehensive or complex a package as *Lattice C* and the editor is slower, but the resulting code is as fast, and some even say it's faster.

A resource editor is available with the *Developer's Toolkit* for an additional £70.50. As you would expect for such a serious piece of software, your ST needs to have a minimum of 1MByte of RAM installed – two drives or a hard drive also come in very handy. *Prospero C* is a serious piece of programming language that takes C as far as you want.

STF RATING: 88%



■ Yes, yes, it looks like another text editor, but underneath lies a linker and an assembler capable of doing frighteningly complex things.

Assemble with care

Enter the serious world of assembly. The most powerful type of language in existence, giving you direct access to the hardware. Nothing can match it for sheer speed or the number of commands needed to do very simple things. The code isn't very portable, and if you're not careful, it can create compatibility problems. It can also be a bit of a nightmare to learn, but if you want to go for serious programming, then it's the business – turn to page 97 to follow our assembly tutorial. Most commercial games are written in assembly or at the very least have portions of assembly code. If your sights are set on fast arcade games and flashy demos, then you need to consider the strange world of stacks and pointers. If you're patient and can survive to become a competent assembler programmer, the world is your oyster, well the ST bit of it is, sort of.

DEVPAC 3

PRICE: £79.95

FROM: HISOFT

CONTACT: ☎ 0525 718181



Devpac 3 is the most comprehensive and powerful assembler going. There's a familiar GEM editor where you can write, assemble and debug your creations. The assembler is fast, claiming a typical speed of some 35,000 lines a second.

You can assemble into memory and run a program without any disk accessing at all. There is a debugger and disassembler with all sorts of fancy features. With the latest release of version 3, com-

patible with all Atari computers including the Falcon, *Devpac* remains the best assembler available.

STF RATING: 91%

GFA ASSEMBLER

PRICE: £50

FROM: GFA DATAMEDIA

CONTACT: ☎ 0734 794941

GFA Assembler is a fast macro-assembler. The editor isn't GEM and doesn't look as pretty, but it's a hell of a lot faster. Macros can be assigned and saved, speeding things up. The assembler is integral with the editor and each line is checked for syntax. There is a symbolic debugger that does horrible things to bugs. It's not the easiest of assemblers to use and isn't nearly as comprehensive as *Devpac 3*. If you want a peek into the world of assembler, then check out Cover Disk 35, it has the full version of *GFA Assembler* on it.

STF RATING: 75%

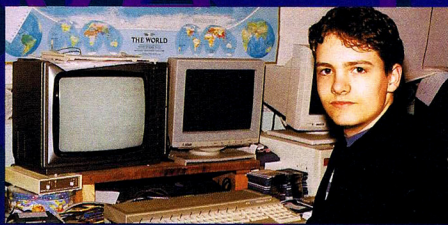
LOOK AT ME, I'M DEMONSTRATING

If you're looking for something to impress your friends with, just sit back and run one of these demos

A glance at the Public Domain libraries and you see lots of programs called demos. They don't do anything much, you just sit and watch. What are they all about then? Demos are there simply to amuse and impress the viewer and show other programmers what a clever swot you are. They range from simple programs in BASIC that throw a few pictures onto the screen and play a sample or two, to very fast assembler programs that showcase new programming techniques.

James Boulton has put together a special little *ST FORMAT* demo for this month's Cover Disk which should give you a few ideas. James uses *Devpac 3* assembler which he reckons is the fastest and easiest assembler to use. With its ability to step through code it makes bug finding easier. Why does he do it? Simply for the fun and to practise programming. Sounds like a good enough reason really.

Billy Allan is another whizzo programmer who has put together some code for you. This time it's written in *STOS* and uses its partner in crime, Colin Watt's extension to the language – the *Misty* extension. This extension adds a heap of new commands mostly aimed at boosting graphics control. Like most programmers he's into it for the fun and to develop programming skills. Ideas are tested out before they're used in games and, of course, the new extension gets a good work-out.



■ Demo programmer, James Boulton taking a hard earned rest to look into the camera. On the Cover Disk is a small example of his artistry plus full annotated source code.



■ A screen from a demo by our own *STOS* expert Billy Allan. The source code is on the Cover Disk.

Douglas Little, a member of the Pixel Twins, responsible for the *Scoopex* demo and the *Stupendous* demo, uses *Devpac 3*. "There are some faster assemblers but none are as easy to use. Demos are an ideal way to learn how your ST works. To produce a good game you need to know about the ST's internals." Douglas has worked on commercial games as an in-house programmer before working on his own projects.

The final resting place of all demos is the PD circuit. If you fancy seeing what your ST is really capable of, check out a few libraries. Among the effects are endless scroll lines of text, terrible chip music and graphics that don't stay still. You also find some of the cleverest and fastest programming going.

Pascal

Originally developed in the '60s, Pascal is a derivative of ALGOL. It is a high level compiled language and embodies the principles of structured programming. The resulting code is orderly and reasonably easy to read. If you stick to standard Pascal libraries, programs are easily portable. It lacks the raw power and flexibility of assembler or C, but has enough poke to develop powerful applications with undue complexity and hair pulling. It's an excellent introduction to structured programming and is widely used in business and industry. A good feather in your programming cap.

HIGH SPEED PASCAL

PRICE: £99.95

FROM: HISOFT

CONTACT: ☎ 0525 718181

As its name would suggest, *High Speed Pascal* claims to be fast, by stating compilation times of more than 20,000 lines per minute. It's designed to be compatible

with *Turbo Pascal* on something called a PC. It's a fairly new arrival on the scene and boasts support for the TT as well as being able to run on a standard 520 ST.

The editor is integrated and there is an interactive error correction system. It all sounds terribly swish and comprehensive – probably because it is.

STF RATING: 90%

PROSPERO PASCAL

PRICE: £102.12

FROM: PROSPERO

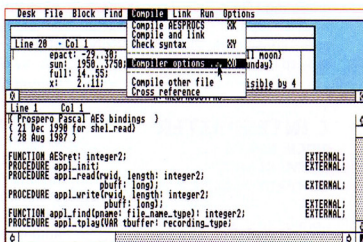
CONTACT: ☎ 081 7418531

Accompanied by three 200 page manuals, *Prospero Pascal* is a comprehensive version of the language with complete GEM, VDI and AES bindings. There are extensions for double precision floating point arithmetic, character string handling and random access to files. You can force it to produce standard Pascal making sorting programs for the dreaded PC a doddle.

■ The *Prospero Pascal* editor – you can write, compile, link and then run a program and return to the editor.

There's also a source level debugger and an optional developer's kit. It uses a friendly GEM text editor using menus, keyboard short-cuts or macros to speed things along, there's even a syntax checker. One of the better implementations on any machine.

STF RATING: 89%



THE PROGRAMMER'S BOOKSHELF

The manual you get with your programming language is often more of a hindrance than a help. We take a look at some of the independent programming books available, from beginners' tutorials to advanced guides

C-MANSHIP COMPLETE

PRICE: £14.95

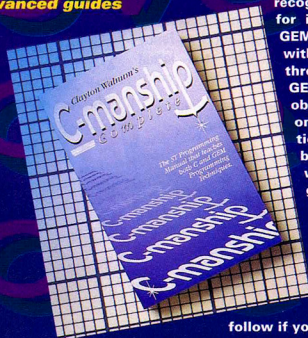
FROM: KUMA

CONTACT: ☎ 0734 844335

ISBN 0-7457-0042-X

C programming is a neglected area on your ST and it is good to see that Kuma have recognised that there is a large market for it. This book covers both C and GEM programming techniques starting with simple string commands, moving through more serious topics such as GEM, the VDI, alert boxes, arrays, object trees and menus, finally going on to program complete applications and Desk Accessories. The book assumes that you have a working knowledge of BASIC programming and builds up on this framework using simple examples, with every line of code described in detail. The book originally started out as a series of magazine articles, and each chapter is a self-contained tutorial. A good book and easy to follow if you are new to C programming.

STF RATING: 84%



ABACUS ATARI ST MACHINE LANGUAGE

PRICE: £18.45

FROM: COMPUTER MANUALS

CONTACT: ☎ 021 706 6000

ISBN 0-916439-48-8

Abacus have probably published more ST related books than anyone else, including some excellent technical hardware manuals. They have taken just as much care with their 68000 machine language introduction. If you have a working knowledge of BASIC and are new to machine language, this book is definitely for you.

The book describes the basic building blocks of a program, with a guide to designing your own algorithms, logical operations, program development and plenty of solutions to real problems. Just about the best machine code tutor you can find.

STF RATING: 83%



PROGRAMMING BY EXAMPLE ST BASIC

PRICE: £14.95

FROM: KUMA

CONTACT: ☎ 0734 844335

ISBN 0-7457-0142-6

This book assumes that you have only a rudimentary knowledge of your ST, in fact, the first chapter is a dedicated guide to using your ST. The second chapter is an introduction to the principles of binary logic, bits, bytes and number systems. The rest of the book is a straightforward tutorial to ST BASIC with plenty of listings to type in. Most of the information can be used with GFA, HiSoft and STOS BASICs with just a few minor changes to the code. All the usual "how to write a simple database" sections are there, along with a comprehensive reference section for most BASIC commands, with a short example for each command. An excellent starter to BASIC programming.

STF RATING: 75%



■ "And the next award tonight is the much coveted 'Most interesting front cover of a programming book' Award. And the winner is... *Creative Basic* by K&M. Let's just sit back for a while and watch the winning front cover intensively."



And the rest

That's not yet it on the programming languages front. There is a wide variety of languages about and most have an implementation on the ST. There are a good few specialised languages, developed mostly for business or scientific use. Here's a small taster of the fringes of programming.

APL 68000

PRICE: £190

BY: MICRO APL

CONTACT: ☎ 071 9281006

APL is a unique language that originated on mainframes. The code looks frighteningly complicated. It uses lots of special characters and commands are very terse. It's aimed at manipulating numbers and eats matrices for breakfast, handling 64-bit floating point numbers. The ST version enables you to use GEM windows and has a

friendly editor with the ability to run several tasks at once. It's fast, obscure and a little weird.

NEVADA COBOL

PRICE: £44.95

FROM: HISOFT

CONTACT: ☎ 0525 718181

An acronym for Common Business Orientated Language, COBOL is a structured and very readable language geared largely to database work. Nevada COBOL runs under the CP/M operating system, so you

need to run an emulator first. Ideal if you already use COBAL at college or at work, but of limited appeal to the bog-standard programmer.

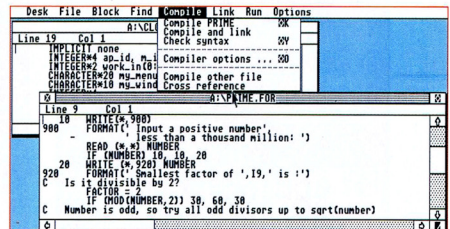
PROSPERO FORTRAN

PRICE: £102.12

FROM: PROSPERO

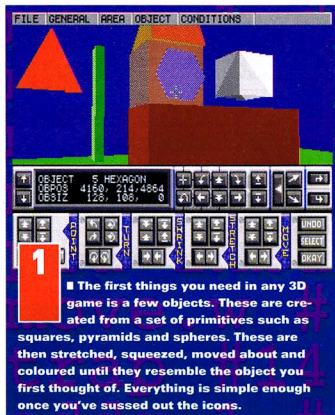
CONTACT: ☎ 081 7418531

■ The Prospero Pascal editor - you can write, compile, link and then run a program and return to the editor, ready to continue editing.



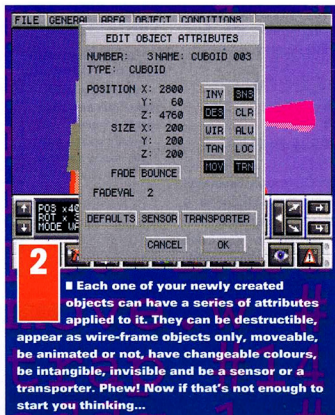
HELPING HANDS

Imagine a three-dimensional world with 3DCK 2



1

■ The first things you need in any 3D game is a few objects. These are created from a set of primitives such as squares, pyramids and spheres. These are then stretched, squeezed, moved about and coloured until they resemble the object you first thought of. Everything is simple enough once you've sussed out the icons.



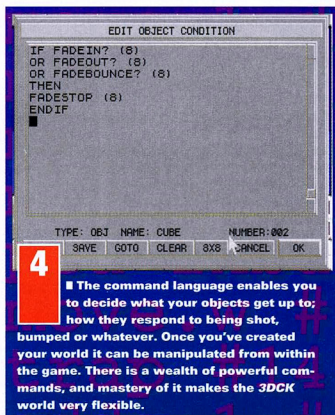
2

■ Each one of your newly created objects can have a series of attributes applied to it. They can be destructible, appear as wire-frame objects only, movable, be animated or not, have changeable colours, be intangible, invisible and be a sensor or a transporter. Phew! Now if that's not enough to start you thinking...



3

■ After an awful lot of manipulation and fiddling, you should have your own set of beautiful objects to play with. 3D Construction Kit 2 comes along with a disk full of example objects to get you going. The 3D world is divided into areas filled with your objects. You then define a series of doorways between the areas.



4

■ The command language enables you to decide what your objects get up to; how they respond to being shot, bumped or whatever. Once you've created your world it can be manipulated from within the game. There is a wealth of powerful commands, and mastery of it makes the 3DCK world very flexible.



5

■ 3D Construction Kit comes with a competent editor that enables you to add sampled sounds to your creation. Samples can be chopped and changed and you can then have special effects applied to them. The only problem being that you need to find the samples yourself. If you don't have a sampler just raid the Public Domain.



6

■ The finished virtual world can be combined with a picture as a border and compiled as a standalone game. You can also define buttons on-screen to control the movement and add gauges and dials to show remaining energy, for instance. Your baby is now ready to be released onto the unsuspecting public.

If you find the prospect of learning a programming language just a little daunting, then you can cheat a bit and use a game creation package. These take all the tedious work out of writing a game and leave you with the fun bits like designing the graphics and the gameplay. Each of the packages reviewed below is geared towards producing a certain kind of game - from shoot-'em-ups to pure text adventures. You can't add features that aren't already available and games bear the unmistakable hallmark of the system used to create them, so you lose some editorial control. You don't escape from

3D CONSTRUCTION KIT 2

PRICE: £49.95

FROM: INCENTIVE

CONTACT: ☎ 0734 817288



Flat games are all very well, but what you really want is a proper three dimensional world where you can go round the back of things and rummage about. 3D programming is notoriously difficult and creating your own version of *Cybercon 3* would require a powerful language and a considerable amount of sweat and skill. Why not let *3D Construction Kit* handle all the dead tricky maths bits? You just design the objects and describe how they behave. Even so, it's still quite a task and there are a lot of controls to work your way around as well as a meaty command language. It's a powerful system and you need a 1MByte ST and lots of patience. The results can be excellent, the only real problem is speed - complex objects can slow things down considerably. Virtual reality here we come.

STF RATING: 90%

SHOOT-'EM-UP CONSTRUCTION KIT

PRICE: £9.99

FROM: GBH

CONTACT: ☎ 0742 753423

If you want to write a juicy shoot-'em-up with a scrolling background, sound effects and loads of sprites hurtling about, you have to be a pretty snazzy programmer. They're not easy to put together - they're at the edge of the capabilities of most BASICs and low level languages require a lot of time to master.

Along comes the very useful *Shoot-'em-Up Construction Kit* to make the whole thing easy. It figures all the complex stuff leaving you to draw the graphics and design the levels. If you follow the Public Domain scene, then you've probably noticed quite a few *SEUCK* games about from the truly awful to the passable.

Unfortunately, these games never get very good. *Shoot-'em-Up Construction Kit* suffers from poor collision detection and an inflexible creation system leading to very similar games. If you do fancy knocking off a quick blaster though, it is by far the easiest way.

STF RATING: 72%



move .1 do a0 this is
move .1 do save old ba
move .1 mouseover (a0)

programming altogether but the languages are dedicated and much easier to get a grasp of. What isn't missing is hard work. None of the systems produce stunning games overnight, but all your efforts are rewarded at the sharp end of the program. The game engine is all there, and you get to drive it. If you get the urge to let your own games loose on the world but can't face getting bogged down with the complexities of programming, then a dedicated game creation package is just the ticket. Mind the doors and don't miss next month's issue when we bring you a *Talespin* masterclass.

STAC

PRICE: £39.95

FROM: INCENTIVE

CONTACT: ☎ 0734 817288

Text adventures are one of the oldest forms of computer games – back in the mists of time and space, early programmers played *Colossal Cave* on multi-million pound mainframes when they thought nobody was looking. Text adventures, as the name might suggest, consist entirely of text – you might get the odd picture if you're really lucky. Players are given a textual description of a world and then type in their actions.

The beauty when creating this type of game is that the imagination is left free to roam, the descriptions can conjure up a world in the mind's eye that pictures can't manage. Games can be set anywhere and be about anything. It's a different approach to reaction-testing arcade games, and once you get into them, they can be extremely absorbing. *STAC* is an excellent utility enabling you to create complex text adventures easily – well, fairly easily anyway.

STF RATING: 81%

TALESPIN

PRICE: ON COVER DISK 40

FROM: MICRODEAL

Talespin produces graphically-based adventures played with the mouse, the full version was rather generously supplied with *ST FORMAT 40* on the Cover Disk. Games are created using a series of pages, each page is built from stored graphics. A series of conditions can be assigned to each graphic. You can have boxes of text popping up with more lists of options or you can play sampled sounds. You can define a series of variables which are altered depending on the player's actions. These can modify which drawings appear on each page, what text appears and which page the player is taken to next. The game system develops in a flow-chart sort of way as you move between pages. It's the simplest game creation system and, apart from drawing the graphics, you can get games together relatively quickly. The biggest drawback is that each page is loaded from disk, so games tend to play slowly. Since the system is so simple, the results aren't very sophisticated but budding game creators get to test their mettle without undue programming pain.

STF RATING: 70%

You discover a secret door in STAC, and... Aaarrgh!

Edit room

Room number 50

Connections :

Short description :
Undead laboratory

Long description :
You are in a small chamber. The air is thick with the smell of decay. An archway leads south. Standing over a body lying on a large stone block is a cleric. As he looks up his gaunt face turns from surprise to anger. Just in time to meet our latest recruit. He shouts. The body slowly rises, it's a zombie.
Associated picture number : 8

1 this all right (type V.N or 0)...

■ For a successful adventure you need to do a mountain of preparation work, keeping track of things on paper helps enormously. The first thing you need is a set of locations or rooms for the adventure to take place in and a set of objects to mess about with. You can have up to 9,999 rooms and 511 objects. So you're not too limited there.

Edit local condition (Room 45)

Condition line 14 is
if verb "put" and (noun1 < 100) and (noun1 > 0) and noun "hole" then if carried noun1 then message 327 wait

2 this all right (type V.N or 0)...

■ *STAC* is based around a simple programming language. You define sets of nouns, verbs and adverbs and then set up a series of conditions, either affecting the entire world or only affecting a specific location. Using these sets you can build up complex arrangements to describe the results of the player's input.

Edit messages

50 You lash out at the scout. "Swine
51 The cave entrance is about 6 feet
52 You don't recognise the bushes.
53 You have never seen bushes like it.
54 The berries taste very sweet. Aft
55 You pick the strange berries from
56 As you move to go east you catch
57 the hand of a pile of rocks, perhaps
58 the hand is mostly bone and sinew
59 As you dig away at the pile of ro
60 The body is mostly bone and sinew
61 You pick up the rusty jena.
62 What would you want with a skele
63 You dig among the rocks again, bu
64 It's a pile of rocks, perhaps a s

3 WIN INSERT SPACE ESC F1
I Iten edit exit del

■ The all important messages that greet the player's actions. Since the adventure relies on text to set the atmosphere and describe events, this is where hard work and creativity pays off. Repetitive or uninspiring text puts people off very quickly. A decent sized adventure must have thousands of lines of scene-setting and mood-inducing text.

Font Editor

EXIT LOAD SAVE UNDO

4

■ *STAC* includes a selection of fonts as well as its own font designer. This enables you to pick a suitable typeface for the setting of your adventure. There's even enough space in the character set for a second alphabet and all sorts of other symbols. You have also a choice of three colours to liven things up a tad too.

5

■ It may be a text adventure but a picture or two can add a dash of spice. *STAC* has its own art package and pictures can be imported or drawn from scratch. You can add as many pictures as you have memory for and use them at any point in the adventure. You can link them to a room, an object or even to the player's input.

Secret room 32 5 12 72

flickering light you can see some carvings on the west wall. Otherwise the room is empty.

What now ? x carvings
The carvings show an evil, smiling skull. Below it is a small hole.

What now ? put marble in hole

6

■ And there you have it, the finished game. Adventures can be as simple or as complex as you want to make them. Careful testing is vital, as players are likely to type in all sorts of responses and bugs can often cause a fatal crash. Competent text adventures make for some of the most engrossing entertainment going.



COVER DISK 45

It's square on
the outside
but round on
the inside.
Chris Lloyd
can't cope
with that
but he sure
knows what it
can do for you

PICK OF THE MONTH

Nigel Mansell's Grand Prix

Rip-roaring raceway er, something.

Page 20

No Second Prize

Two wheels and very, very fast

Page 23

Cardfile

An handy address book with absolutely no crossings out in it.

Page 21

Protext Dictionary

Add spell checking to Protext.

Page 23

■ For more details see page 38.

STF Demo

Exclusive demo written for ST FORMAT in assembly along with the full source code, so you can play about with it to your heart's content.

Page 23

STOS Demos

Three STOS demos complete with source code.

Page 21

■ For more details, turn to our programming feature on page 12.

Error Base

An incredibly handy STOS accessory so that you can pin down those error messages.

Page 24

4-7-11

Three addictive games of Patience.

Page 24

Desk Switch

Change Desktops with no hassle.

Page 24

Assembly source code

Assembly source code to go with the tutorial.

Page 23

■ The second part of our assembly tutorial starts on page 97.

Back Up

The easiest way to back up your copy of the Cover Disk.

Page 24

Nigel Mansell's Grand Prix

BY: GREMLIN
RESOLUTION: LOW RES ONLY
FOLDER: MANSELL
FILES: DEMO.PRG
GET STARTED WITH: SEE BELOW

Unless you've had your head in a bucket, you may have noticed that some British chap called Nigel Mansell won the Formula One

World Championship last year. Those sporting people down at Gremlin have given you the opportunity to join in by, er, sitting in front of your ST pretending you're the man himself and wrestling with the joystick.

Nigel Mansell's Grand Prix is a superb platform game with loads of power ups... only kidding - it's a Formula One racing game. The Cover Disk demo gives you the opportunity to race around one of the circuits. There's none of the management side of things, but you get to race to your heart's content. Once you've loaded the demo

- see very important box thingy below for details - it's a non-stop race. Everything is joystick controlled. Press the <Fire> button to get past the loading screen and you'll find yourself on the grid in the motor. When the lights hit red press the <Fire> button, that's your accelerator. Steer by moving the stick left and right and pull back to brake.

■ The most nerve wracking moment of all... Did you leave the gas on? On the grid ready to throw yourself into Nigel Mansell's Grand Prix as well as a few lamp posts.

You have three laps to make your mark. You can't crash but every collision costs vital speed. Start revving your engines.



SIMPLY AMAZING, MURRAY

Fast cars, leathers and loud engines - who could ask for more? Nigel Mansell's Grand Prix pits you against 12 ST-controlled cars, armed only with a very famous alter-ego and a dead quick William's Renault Formula One racer. You can pop into the pits to change tyres if you fancy it but it's not really worth it on a three lap race. Suit-up and get into gear.

1 Your times, current lap time, your best lap time and how far behind the winner you are, if this time is zero then you're probably in the lead.

2 Your position out of the 12 cars and the number of laps you've got remaining out of the three.

3 The track with coloured blobs representing each car. You're the white one. Each cars driver has a different skill level. You shouldn't have too much trouble with the worst. The best ones are a different ball game altogether.

4 This shows you your engine revs and what gear you're in. The demo only comes equipped with an automatic gearbox.

5 Just what it looks like - a bar with tyres written next to it. Doesn't seem to do much in this demo.

6 The all-important speed. Not surprisingly you need lots of this to win. Hitting track-side obstacles does tend to knock your speed down a bit, so avoid them if you can. Also avoid hitting the other cars. In fact, your best bet is to try not to run head-long into anything.



Before you do anything else, you must read this

Tread carefully

To keep your **STF** Cover Disk safe, write-protect it by moving the black tab so you can see through the hole. Nothing can now be written to your Disk. Write-protection also keeps your Disk safe from viruses.

Study the map

Space on the Cover Disk files is limited, so you may find text pages for some programs on the Disk. These

have the file extension **DOC**. It's always a good idea to read these for more information on a program. Double-click on them and select "Show" to display the text. If text disappears off the screen when you try to read a **DOC** file in low res, change to medium res and try again.

Avoid the pitfalls

To keep your **ST FORMAT** Cover Disk safe you should make a backup, so if

anything goes wrong, you still have the original. Because we use a special disk format to squeeze programs on to the Disk, you can't do a direct disk-to-disk copy. We've made life easy for you, however, with this **Back-up** program. Follow the instructions on page 24 and you can't go wrong. Now there's no need to risk damaging or losing your disk again!

Some programs are compressed to fit on the Disk and cannot be run

directly from it. Follow the instructions here and it'll all be fine.

Is your drive obsolete?

We use a double-sided disk format. If you own a single-sided drive, you can't read the Cover Disks, or much of the new software since single-sided drives are obsolete. We showed you how to fit internal drives in **STF** 32 – turn to page 58 to order a copy if you missed it.

Cardfile

BY: TYSON GILL

RESOLUTION: MEDIUM AND HIGH RESOLUTION

FOLDER: CARDFILE

FILES: CARDFILE.PRG, CARDFILE.ACC, CARDFILE.TXT

READ: CARDFILE.TXT

GET STARTED WITH:

CARDFILE.PRG

Address books always end up tatty, covered in scribbled out names and somewhere else when you really need them. *Cardfile* is a specialised database for names and addresses you can get at in a flash. There are two versions on the Cover Disk, you can either run

the **CARDFILE.PRG** from the Desktop like any other program, or use the Desk Accessory version, so you can find that vital postcode in the middle of a word processing session without interrupting things. This needs to be on the root directory of your boot disk – that is, not inside any folders and on the disk in the drive when you turn on your ST. There's a powerful search feature and you can export files to other applications. The program's configuration can be saved and loaded automatically.

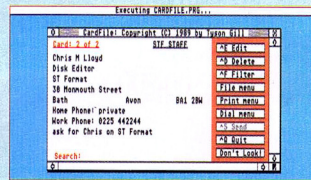
Load up **CARDFILE.PRG** and take a look. You need a disk to save your address book on since the Cover Disk is already jam-packed with goodies. The first thing you want to do is add a few records.

Click on "Edit" to enter the edit screen. A red cursor appears in the text window. You can now type away and add your record. Click on "Add" to add the record to your address book. Clicking on "New" clears the edit screen. When you've added a few, it's worth saving – click on "File" and select "Save," this saves your address book as the file **CARDFILE.DAT** and loads it into *Cardfile* automatically next time you load it. To save under a different name use "Save as." Having got a mass of addresses in there, you need to be able to quickly get to the one you want.

■ *Cardfile* is a powerful database for those sensitive names and addresses. Use the cursor keys to move through the records.

Click on "Filter" and enter some known data – the first name, for example, and then click on "Every," this takes you straight to every matching record. Smart, eh?

That's just a brief run through the features of *Cardfile*. Full details of all the juicy functions are in the text file **CARDFILE.TXT**. It's advisable to have a good read before you start compiling your address book for real.



STOS Demo

BY: BILLY ALLAN

RESOLUTION: LOW RES ONLY

FOLDER: STOSDEMO

FILES: DEMOS.BAS

GET STARTED WITH: SEE BELOW

If you're into demo programming and *STOS Basic* you're going to love this. The file **DEMOS.BAS** holds compacted source code and an updated version of the *Misty* extension originally featured on Cover Disk 38. The extension adds all sorts of sniffling commands to make *STOS* even more powerful –

among the goodies are super-fast screen copiers that can muck about with bit-planes. To show off the commands there are example programs with classic demo effects.

Load **DEMOS.BAS** into *STOS* and run it. Up comes a menu, select <3> and use the file selector to choose where you want the *BAS* examples. Then select <4> to write the *Misty* extension to disk. The examples use the *Misty* extension so you need to install it before you can see them. Copy **MISTY.EXM** to the *STOS* folder on your *STOS* language disk and **MISTY.ECM** to the **COMPILER** folder if you have it. Now when you load *STOS*, the

extra commands are yours to, er, command. Now take to a look at what *STOS* and *Misty* can do. There are three example programs **BEER.BAS**, **COUNTRY.BAS** and **LARD.BAS**. There are scroll lines, parallax scrolling, raster effects and all sorts of wibbly graphics.

Use the Spacebar to start and end each demo. If you end up with a totally black screen press <Undo> twice to reset the editor. **BEER.BAS** needs 1MByte and all of them

■ A scrolling line of text, bouncing letters, manic music and a moving background – must be a demo. One of three flashy pieces of *STOS* source code to go with the *Misty* extension.

really benefit from being compiled. Once you've gawped at the efforts for a bit, have a look at the source code and have a bash at the demo coding lark yourself. After a while you'll find you too can wobble away with the best of them.



Pre-race notice

If you have an *STE* or an *ST* with 1MByte or more, you can run *Nigel Mansell's Grand Prix* straight from the Cover Disk. If you have a 520 *STFM* you get a message about not having enough memory when you run the demo. Don't panic – it needs to autoboot.

Copy the file **DEMO.PRG** across to another disk and place it in a folder called **AUTO** on the root directory of the disk – that is, not inside any other folders. The game now automatically loads when you boot from this disk.

GASTEINER

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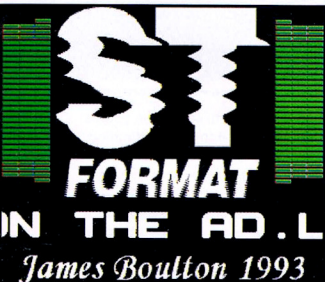
Acknowledged.

ST FORMAT Demo

BY: JAMES BOULTON
RESOLUTION: LOW RES ONLY
FOLDER: STF_DEMO
FILES: STF_DEMO.PRG,
SOURCE.TOS
GET STARTED WITH:
STF_DEMO.PRG

Inside the STF_DEMO folder there's an example of the assembly coder's art. Run STF_DEMO.PRG and be reasonably impressed at what is possible with a spot of assembly programming. How about smooth scrolling text, chip music with on-screen volume indicators and large ST FORMAT logos with a distinct sine wave sort of wobble to them?

Now you're probably the adventurous type who fancies a bash at assembler programming yourself, right? Copy the file SOURCE.TOS to a disk with plenty of space and run it. The full source code for the demo extracts itself from its squashed state and writes itself to your disk. Now you can delve deep into its secrets and swipe them.



See it wobble, gasp with amazement as it scrolls, whimper at the music, look at the source code and nick all the good bits. The ST FORMAT demo shows off why assembler is the top dog language.

Protext Dictionary

BY: CLIVE PARKER
RESOLUTION: ALL RESOLUTIONS
FOLDER: PRO_DICT
FILES: PRO_DICT.TOS,
READ_ME.DOC
READ: READ_ME.DOC
GET STARTED WITH: SEE BELOW

If you bought ST FORMAT 41, by now you must be tapping away at Protext – that excellent word processor we gave away. Now, all you need to make you completely

No Second Prize

BY: THALION
RESOLUTION: LOW RES ONLY
FOLDER: NSP
FILES: NSP_DEMO.PRG
GET STARTED WITH:
NSP_DEMO.PRG

If you think zooming about in a Formula One racer is a buzz, try it on two wheels leaning into the corners. No Second Prize is a phenomenally quick vector graphics racing game that puts you astride a hideously fast bike. If you've 1MByte or more, open up the NSP

1MByte only

For the first time this is an ST Format Cover Disk program that needs 1MByte to run. If you try it on a 520 you are politely informed that you don't have enough memory – in French. There are an increasing number of ST games released that are 1MByte or over only and luckily, more and more of you have 1MByte or more of RAM. We thought it was too good a demo to miss.

folder and run NSP_DEMO.PRG. From the title screen you can take a look at the tracks and the track records. Although you can't enter a proper season of racing, the demo enables you to do as much training as you like on the first five tracks. Select "Training" and choose your driver from the unlikely selection of characters by clicking on them with the mouse – each has different abilities. Next you get to choose the track to practise on, select it with the mouse then click on "Choose." The next screen enables you to choose who is in the session with you. The more the merrier, so select "All Drivers." The penultimate screen enables you to select an automatic or manual gearbox and the mouse sensitivity. Phew! That lot out of the way it's time to belt hell for leather around the circuit. Use the mouse to steer. The right mouse button is the accelerator and the left button is for the wimpy types who want to

You choose from these riders. Each has different abilities – top speed, acceleration, cornering and ability to take pain. This chap sounds just the ticket – adequate in curves apparently.



MOVING UP A GEAR

No Second Prize is simple enough. Make your selections at the start of the game, move the mouse about, zoom up the gears and go sliding off the track at 300 km/h on the first bend. Well, you didn't really expect it to be that easy, did you?

Speed and revs, if you're using a manual box it pays to wind the bike up to the red before you change gear. If the little exclamation lights up you've damaged your engine.

The circuit, each rider appears as a little coloured dot.



From left to right, your position, the current lap – the demo is a six lap race, elapsed time and current lap time.

Damage done to you and your bike, if the bar reaches the end it's curtains.

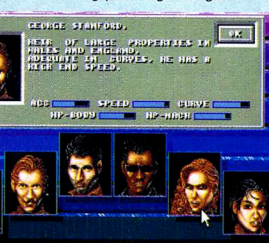
Assembly Listings

BY: TONY WAGSTAFF
RESOLUTION: ALL RESOLUTIONS
FOLDER: ASSEMBLY
FILES: BIOMAC.I, DEGASHOW.S,
GMDOSMAC.I, XBIOSMAC.I
GET STARTED WITH: SEE BELOW

If your appetite for assembler-type things has been whetted by last month's first part to our assembly tutorial, then you're in luck, it's about to be whetted again. This month's dip into the murky depths

of traps, stacks and calls is a program to display a Degas picture to screen, complete with a bunch of operating system macros to do all types of clever things with the operating system.

If you've never seen fast vector graphics, you're in for a treat. When No Second Prize zooms along, you find yourself physically jumping about when you run into a bridge or something, terrific stuff. Start revving your engines again!



From left to right, your position, the current lap – the demo is a six lap race, elapsed time and current lap time.

Damage done to you and your bike, if the bar reaches the end it's curtains.

happy is a dictionary for it. Fret no longer, that Clive Parker chappie has worked late into the night and produced one. It's been squashed to keep the size down to manageable proportions. Copy PRO_DICT.TOS to a blank disk and run it. After a minute or three the dictionary files appear. Then copy the two DCT files to your working copy of Protext. You now have to tell Protext that it's got dictionaries to work with. Select "Edit Configuration" from the options menu and enter STFORMAT.DCT as Dictionary One. Save the configuration and you are now in the spell checking business.

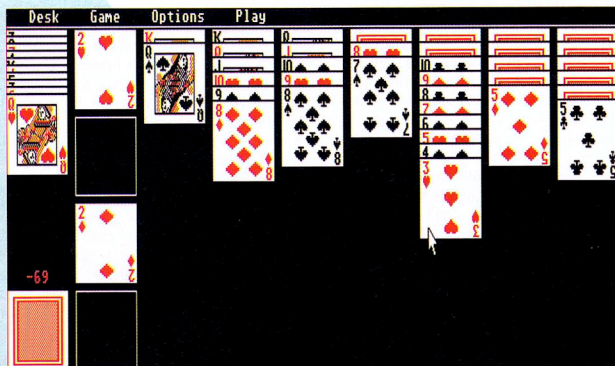
of traps, stacks and calls is a program to display a Degas picture to screen, complete with a bunch of operating system macros to do all types of clever things with the operating system.

If your appetite is dripping with excitement, you should turn to page 97 to find this month's tutorial quick before it comes over all peculiar and starts whimpering desperately. If your appetite is not remotely interested, you can stand about muttering about how you could learn assembler programming if you really wanted to, it's just that you're busy with other things at the moment.

4-7-11

BY: JOHN PHILLIPS
FOLDER: 4_7_11

FILES: 4_7_11.PRГ, 4_7_11.DOC
RESOLUTION: MEDIUM AND
HIGH RESOLUTION
READ: 4_7_11.DOC
GET STARTED WITH: 4_7_11.PRГ



4-7-11 is a game of Patience. You might think it's a bit dull right? Wrong. This game swallows time. You load it up for a quick game, and the next thing you know, hours have magically gone past. You have been warned.

There are three games of Patience. The classic seven card Patience, where you put alternate red and black cards in descending order, trying to get all the cards out on the aces. The "Options" menu controls the various different ways of playing. Casting out 11s, where you remove two cards that add up to 11 or a run of Jack, Queen and King. Or finally four or Russian patience, where the aim is to end up with four kings. You can

remove cards if it has a lower value as another card of the same suite. Full details are in the text file 4_7_11.DOC.

Everything is mouse controlled. Start at the "Game" menu and select the game you want. Go to the "Play" menu and select the scoring method. Las Vegas scoring is the strictest one. The cards are moved with the mouse, click on them and hold down the left button as you move them about and let go when they're in the right place.

None of the options are easy to complete. Think about the games you've played with real cards. Did you really complete any without cheating? Be honest. 4-7-11 is Shareware and registration brings a special Desk Accessory version.

■ Patience comes to your ST. It's the game where people lean over your shoulder and point out that you missed a match and you make out like you knew it was there and it was a tactical decision not to take it.

Error Base

BY: MARTIN WRIGHT
RESOLUTION: ALL RESOLUTIONS
FOLDER: ERRORBASE
FILES: ERRORBASE.ACB,
ERROR.REC, READ_ME.DOC
READ: READ_ME.DOC
GET STARTED WITH: SEE BELOW

At the back of the STOS Basic manual there is an explanation of all

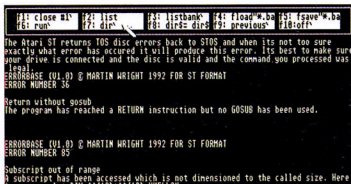
the error numbers that appear when things don't work out. Unfortunately, they're not in numerical order and looking up the particular reason why your latest creation crashes is a bit of a chore. Error Base gives instant access to all the error messages from within STOS.

It runs as a STOS accessory. Copy across ERRORBASE.ACB and ERROR.REC to your STOS disk and load it in with the direct command `accload "ERRORBASE.ACB"`. When a

program crashes type in `?ERRN`, this gives you the error number. Then press `<Help>` to get at the STOS accessories and press the appropriate function key, enter the error number and you're given the full low

■ Just as we suspected, the array hasn't been dimensioned to the called size. Error Base brings all those interesting STOS error messages to only a few keystrokes away.

down on what's gone wrong. A very handy addition to your arsenal if you're a STOS programmer.



Cover Disk Back-up

BY: BRIAN TILLEY
RESOLUTION: ALL RESOLUTIONS
FOLDER: BACK_UP
FILES: BACK_UP.TOS
GET STARTED WITH:
BACK_UP.TOS

The insurance companies won't insure against acts of god. If your

Cover Disk gets struck by lightning or washed away in a flash flood you've had it. The only sure way of complete protection is to make a copy of the disk.

The Cover Disk uses a spiffing extended format so we can cram extra goodies onto it. It also means you can't do the standard Desktop copy. Copying each file across to drive B is an almighty pain. To get round this and keep you happy we've put a clever little disk copying program on the Cover Disk that makes it all as easy as pie. The first

step is to write-protect your disk so nothing can be written or deleted from it. Move the little black tab at the corner of the disk so you can see through the hole. Now get a spare disk ready and run `BACK_UP.TOS`. Up pops a menu, press `<1>` to start copying the Cover Disk, just swap disks when prompted. In no time you get a new copy. The source disk is the one you are making a copy of and the destination disk the one you are copying it to. If you're lucky enough to have two disk drives

then drive A is used for the source disk and drive B for the destination. *Back-Up* is pretty smart and uses all the available memory so if you have 1MByte or more, you only need to make one disk swap. *Back-Up* can be used to swap up most other disks, press `<2>` to see what's possible. Don't bother trying to make back-ups of commercial game disks unless the manual tells you to – they use copy-protection routines to thwart you. You can make quick and easy copies of most disks without trouble – smart.

Desk Switch

BY: CHARLES F. JOHNSON
RESOLUTION: ALL RESOLUTIONS
FOLDER: DESKSWIT
FILES: DESKSWIT.DOC,
DESKSWIT.PRГ
READ: DESKSWIT.DOC
GET STARTED WITH:
DESKSWIT.PRГ

Under the Options menu on the Desktop, you find an option called "Save Desktop." If you select this, a file called `DESKTOP.INF` is cre-

ated on your boot drive. That's the floppy disk drive unless you're lucky enough to be sporting a hard drive. This handy little file stores the name and position of your disk drive icons, the position of your windows, the screen colours and a host of other information on how your ST is set up. It's usually only read when you very first turn on your ST.

Desk Switch is little utility that enables you to read different INF files straight from the disk. No more fiddling with the Control Panel settings to configure things differently for different uses. When you run `DESKSWIT.PRГ` a file

selector pops up and you select an INF file to load. The first job is to set things up as you like them and do a "Save Desktop" then rename the file to something else, but keeping the INF letters at the end. Do this for each setup you want.

Now you can quickly switch between them using *Desk Switch*. It saves having the Control Panel Desk Accessory loaded and saves time and effort. Sounds like a bit of a goody. Full details are in the text file `DESKSWIT.DOC`.

TROUBLE WITH INSECTS

Some of you may have experienced problems getting *Insectroid* to work on STs with 512K. It works on a 520 STE or TOS 1.4 520 STEFM no problem, but needs to autoboot. Copy across the INSECT folder to a blank disk. Now create a new folder called

AUTO and copy the file `INSECT512.PRГ` to it. *Insectroid* now runs automatically when you boot with this disk. If you have a TOS 1.2 520 STEFM or earlier, you are left in the cold. A thousand apologies are probably not enough.



What's your problem?

1. This Disk won't load!

Before you do anything else, check your drive. If it's older than 1988, it's probably single-sided and can't format any disks to more than 360K – this also means it can't read *ST FORMAT* Cover Disks. Single-sided drives are obsolete and it's well worth upgrading. Replacement drives are easy to fit and cost as little as £35. We covered fitting new internal drives in *STF* 32 – turn to page 58 to order a copy if you missed it.

So your drive's spanking new, or at least it's double-sided, and you still have a problem. *ST FORMAT* duplicates hundreds of thousands of Disks every month so, unfortunately, some are bound to be defective or damaged in some way. If the Disk just won't load, or you can't open a window at all, there's nothing in it, or the folder names are gobbledegook – the Disk is defective. It doesn't happen often, but please accept our sincere apologies. You're guaranteed a free replacement if you return the Disk to:

**ST FORMAT April Disk Returns,
DisCopy Units 2 and 3, Omega
Technology Centre, Drayton Fields,
Daventry, North Hants NN11 5RT.**

Enclose a sturdy unstamped self-addressed envelope – we pay for the postage – and a brief letter explaining the problem. If you're worried about sending your precious Disk via the normal service, the Royal Mail's Recorded Delivery service costs only 30p on top of the normal postage. Please don't send your defective Disk to any other address than the above one – we have no stocks of Disks at the Bath or Somerton offices.

2. I can't work out this Cover Disk program!

Your Disk seems OK; everything loads, but you've got a problem with one of the programs. Make

sure you've read all the relevant Cover Disk pages and any document files on the Disk. Try consulting your ST owner's manual – that may have the information you need. Still got a problem? Then give us a ring on Wednesday afternoon. Telephone the *ST FORMAT* Cover Disk Hotline ☎ 0225 442244 on Wednesday between 2 – 6 pm only.

We don't write the Cover Disk programs ourselves and don't know as much about them as the programmers, but we'll do our utmost to sort your problem out. Please note that the above phone line is for Cover Disk problems only. If you have any other queries, read on!

3. I have a problem with this other program I bought!

The best place to start is the distributor of the program. Most software houses run some kind of helpline service – check the information that came with your software for the number.

4. I've still got an ST problem!

If you still have a problem, you suspect your machine may be faulty, or you need an answer to a more general query – then you have two options: (a) Ring the official Atari Helpline ☎ 031 332 93233 on any day from Monday to Saturday 6 pm – 11 pm or on Sundays from 8pm to 11pm. (b) Write to ST Answers, *ST FOR-*

You could win loads of cash!

We pay for your software – games, utilities, demos – anything good, original and short. If you've written anything worthy of appearing on *STF*'s Cover Disk, send it with this form and full documentation to: Chris Lloyd, *ST FORMAT* Cover Disk Editor, 30 Monmouth Street, Bath, Avon BA1 2BW. Please be patient: we get absolutely loads of submissions, and we try to give them all a fair testing!

Name _____

Address _____

Daytime phone _____

Program title _____

Total size in K _____

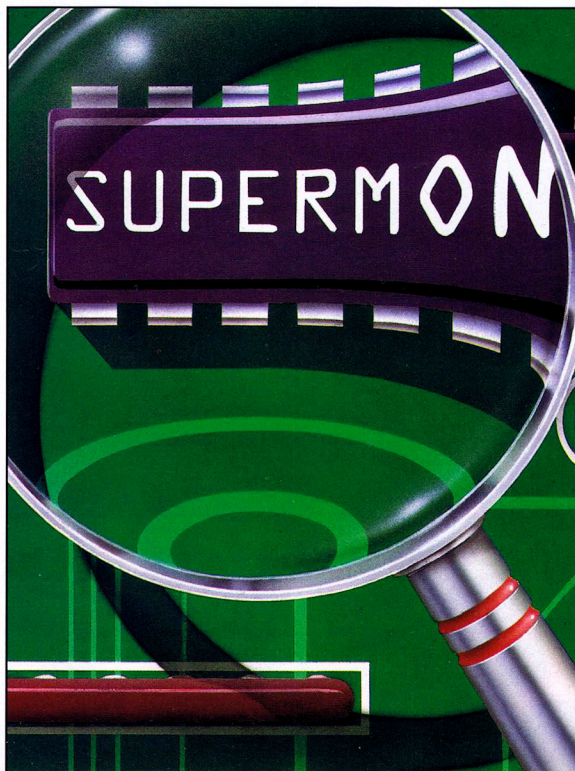
On a separate sheet, please explain concisely what the program does and why you happen to think it's so brilliant.

Remember to: ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Contributions are non-returnable, so keep your own copy of your program ■ Enclose an attractive bribe. Not that it makes any difference.

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I hereby agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed _____

MAT, 30 Monmouth Street, Bath, Avon BA1 2BW – and let *ST FORMAT*'s team of experts tackle your problem in the pages of *STF*. To help us when sorting, could you please indicate on the envelope what type of problem it is – for a full list, turn to ST Answers on page 44. Cheers!



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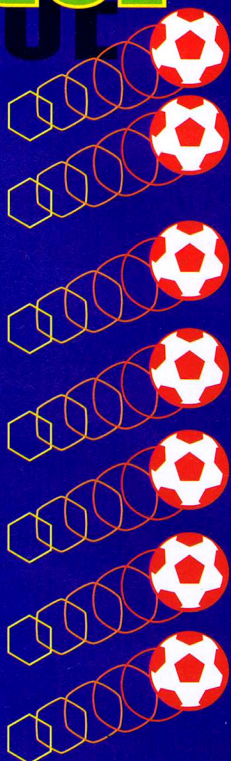


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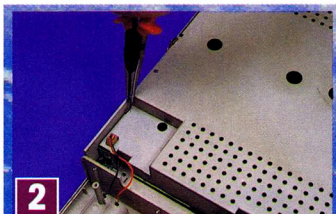
Ocean Software Limited, 2 Castle St,
Castlefield, Manchester, M3 4LZ.
Tel 061 832 6633
Fax 061 834 0650

Installing the Reflex Graphics card into your Mega ST



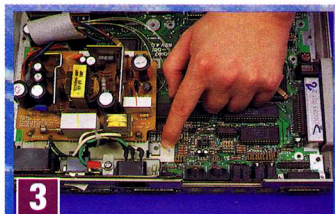
1

1 Turn your Mega ST upside down and remove all the screws from the underside of the machine, including the floppy drive retention screws - put them somewhere safe. You have to take out the floppy drive to enable you to remove the shielding.



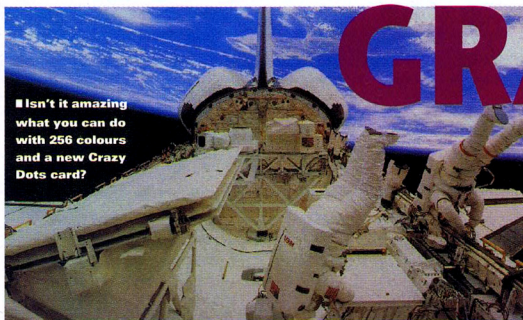
2

2 When you remove the top of your Mega ST, don't forget to disconnect the cables that lead to the battery pack for the internal clock. Untwist the tabs that hold the shielding in place and remove it.



3

3 Take out the power supply and remove the circuit board from the case to fix a support post for the card. When the power supply is put back on the board, the support is located near one of its legs.



Isn't it amazing what you can do with 256 colours and a new Crazy Dots card?

GRAPHICAL

Isn't it about time you injected a bit of high res into your ST? Follow Clive Parker in the graphic upgrade zone

Your ST is an exceptional machine which can be used for exactly the same purposes, and just as effectively, as the more expensive Macs and PC clones. One major drawback, however, is the limited screen modes; 16 colour 320 x 200 pixels in low res, four colour 640 x 200

pixels in medium res and 640 x 400 pixels in monochrome high res.

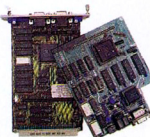
Whenever a new video standard comes along for PCs, a new graphics card slots in, to replace the old and less powerful board - but you can't do this on your ST.

The Mega ST and Mega STE do have expansion capabilities; the older Mega STs have an internal 68000 bus expansion slot which can only be reached by dismantling the machine. The Mega STE's expansion port is an industry standard VME slot and can be accessed by removing a small cover. Although touted as industry standard, the VME slot on the Mega is in fact half-size - not particularly

standard. In the UK market, there are two major graphics upgrade cards available for your ST.

Crazy Dots is a 24-bit colour graphics card which enables your ST to display 32,000 colours from a palette of 16.7 million. The second, the Reflex Graphics System card, can increase the mono resolution of your monitor up to a massive 1,024 x 1,024 pixels.

These two circuit boards increase the screen resolution of your ST. They're not cheap and you need at least a Mega ST to use them.



GRAPHICAL BLISS SOON ON AN STFM NEAR YOU

Feeling left out 'cos you have an STFM? Well, now it's your turn to find out how to enhance your ST's graphic environment

To improve your STFM's resolution, you need to install an inexpensive Autoswitch Overscan board currently priced at £39.95. This board is only compatible with older machines. It cannot be installed in STEs or Mega STEs and does not work with versions of TOS above 1.4. Overscan increases the vertical and horizontal resolutions in all three modes. Mono high res is increased to 672 x 480 pixels and medium res to 752 x 280 pixels, giving a high resolution look to medium resolution programs.

All GEM based software can be used with the Overscan board,

and if any programs are not compatible then the board is easily disabled. The board is not that simple to fit because you have to do some soldering. If you aren't a wizard with a soldering iron, then you should get System Solutions to fit it for you. Give them a call on 0753 832212 for details of their service and current prices.

One of the problems found with GEM based graphics programs, is the relatively slow screen update speed. If you move a graphic on a DTP page in Calamus or Calligrapher you have to wait for the whole screen to be redrawn before you can do anything else to the page. This is not just an ST problem, the same annoying delays occur even with the top of the range Macintosh DTP programs. The solution is to increase the operating speed of the ST, either by means of a soft-

ware accelerator or a piece of hardware as an add-on.

Take the soft option

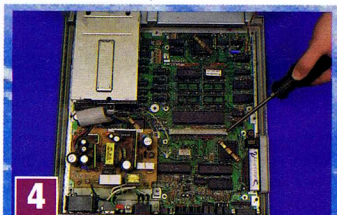
Software accelerators are programs designed to replace the built-in ROM routines that deal with the screen display and updates. These ROM routines were written in C, which is a comparatively slow language when compared to machine code - several clever programmers have now written replacement screen routines in assembler to speed up the display. Two early screen accelerators were Quick ST (reviewed in STF 33) and Turbo ST but these have now been superseded by more efficient programs.

Quick ST has gone through several version numbers before being sold to Codehead Software, rewritten, redesigned and

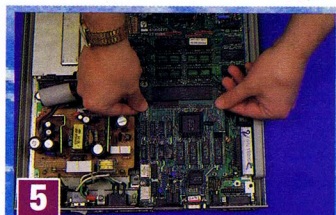
STF Warning

If your machine is less than one year old, opening it up to install a card voids the warranty

Fitting a graphics card is a simple job, be it a VME board for the Mega STE or a standard bus expansion card for the Mega ST. It's always a good idea to know what you need before you start; in this case, a couple of Phillips screwdrivers and a pair of long-nosed pliers should help.



4 Locate the 68000 processor expansion bus on the main circuit board of the Mega ST. It is located towards the back of the machine in line with the front edge of the power supply. Remove the blanking plate at the back of the case.



5 Position the card with the sockets towards the rear of the machine so they are positioned in the gap left by the blanking plate. Press the card firmly into the expansion slot and connect the power lead between the card and the ST.



6 Carefully reassemble your Mega ST without fixing the lid down - this is so that you can test the card. If the card doesn't work, then you can quickly check the connections. If it works correctly, then you can complete the assembly.

BLISS

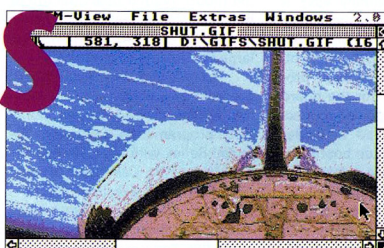


CRAZY DOTS

MACHINE: MEGA ST,
MEGA STE
PRICE: £449 FOR THE
STANDARD VERSION,
£529 FOR THE HIGH
COLOUR VERSION

FROM:
SYSTEM SOLUTIONS
CONTACT: ☎ 0753 832212

The Mega STE version of the Crazy Dots card is a breeze to install. Remove the VME cover plate, unplug the serial port ribbon cable, and slot in the card. The installation should take you about five minutes - all upgrades should be this easy. The manual has full and



■ This is the same GIF shuttle picture as the one on the opposing page, but in bog-standard ST 16 colour low resolution mode. The basics of the picture are there, but all the detail is lost because of the reduction from 256 to 16 colours.

detailed instructions for both Mega STE and Mega ST versions - the instructions for the Mega STE are only one paragraph long!

Once you've slotted in the card, your next move is to install the software onto your hard drive. Once again, full instructions are spelt out clearly in the manual. All you need to do is copy the Auto folder programs across to the Auto folder of drive C, the Crazy Dots Control Panel Accessory to the root

directory and copy the rest of the Crazy Dots folders.

There is a selection of monitor drivers supplied with the software, so you must take care when choosing the driver for your monitor - installing parameters that your monitor can't handle damages it. The software is pre-configured for standard VGA output, enabling resolutions of 640 x 200, 640 x 400 and 640 x 480 pixels in monochrome, two, four, 16

and 256 colours. Obviously, if you have a large screen colour monitor, then some of the greater video modes can be used - this enables you to use 32,000 colours on-screen from a palette of 16.7 million. The AOC 14 inch VGA monitor supplied provided excellent results in 256 colour modes.

Crazy Dots really comes into its own when used with programs like Calamus SL, PageStream 3 and Didot Professional, but you don't necessarily need one of the high powered DTP or graphics retouching packages to use Crazy Dots. Any correctly written GEM application runs quite happily with a Crazy Dots board installed, but if you are using top of the range applications and are still working in mono, then you have to be crazy not to get it.

Crazy Dots is easy to install, easy to configure, easy to run and easy to fall in love with.

STF Rating: 93%

mutated into *Warp 9* - see the review in *ST FORMAT* 38 (if you missed it, turn to page 58 to find out how to get your copy). The program accelerates screen redraws in DTP programs, scrolls text at an alarming speed in word processors and generally gives all GEM graphics programs a much needed boost in the speed department. The program is memory resident - meaning it loads when your boot-up your ST - and intercepts any calls to the ROM routines to run its own code. This program runs on a 512K ST because it only uses 17K of RAM, but it's really intended to speed up larger DTP and graphics programs. *Warp 9* costs £24.95 from the ST Club (☎ 0602 410241) and is an inexpensive alternative to a hardware accelerator.

The other major accelerator is *NVDI*, a German VDI (Virtual

Device Interface) replacement from System Solutions (☎ 0753 832212) which we reviewed in *ST FORMAT* 37. The VDI is one of the two major parts of the GEM operating system, the other part being the AES (Application Environment Services). The VDI provides low level device independent drawing routines known as graphics primitives which, along with the Line-A commands, are the basis of GEM's drawing routines. The VDI also deals with input functions for receiving data from the mouse and keyboard.

Totally 68030 processor compatible, *NVDI* replaces the built-in VDI C routines with its own optimized machine code. These can speed up some ST graphics functions by a factor of ten, and also provide a replacement for GDOS enabling you to run any GDOS

dependent programs - such as *Timeworks 2* - without installing GDOS first. Several other utilities are bundled with *NVDI*, including a Desk Accessory and CPX to control the program and an excellent mouse accelerator.

NVDI is probably the best software solution to accelerating your ST and is well worth the £39.95 asking price. There is also a special version of *NVDI* designed and adapted to work with the Crazy Dots board for £79.95.

Want to be well 'ard?

The alternative to a software accelerator is a hardware device. Normally these boards consist of a 68000 processor running at a higher clock speed than the standard 8MHz that you get on the ST, STE or Mega ST.

Various boards are available from System Solutions (☎ 0753

832212) running at clock speeds from 16MHz up to a staggering 50MHz - remember, the faster the clock speed, the more expensive the accelerator board. You can also install a 68030 board running at a higher clock speed. The 68030 processor operates more efficiently than a 68000 processor - combined with the added clock speed it gives you an enormous increase in productivity. System Solutions can provide the following accelerator boards.

PlusCache ST 16MHz	£39.99
Turbo 16	£139.95
ICD Ad-Speed	£209.95
ICD Ad-Speed STE	£229.95
Turbo 25	£299.00
Tiny Turbo 030-40MHz	£699.00
Includes 68030 processor	
Turbo 030-40MHz	£1,199.00
4Mbytes Fast RAM includes 68030 processor and 4Mbytes of fast RAM	

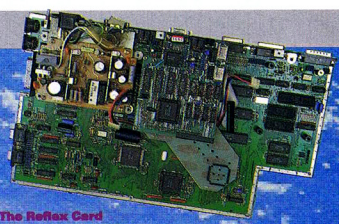
MOUNTING THE ADAPTOR IN YOUR STE

Installing the Reflex Graphics card in the STE is quite simple, the biggest problem is getting the machine stripped down!

All of the ST shielding has to be removed, along with the floppy drive and keyboard. The adaptor is mounted over the square 68000 of the STE and plugs directly onto it. It must be firmly pressed down to ensure a proper connection. Support legs with sticky pads are provided to hold the board above the SIMMs banks and prevent it from making contact with the motherboard. The Reflex

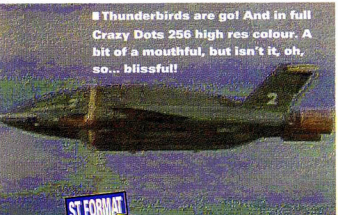
Card then simply plugs into the adaptor. You have to cut the back of the STE case to enable access to the monitor ports of the card. You also have to cut the shielding in the area above the board, otherwise it is in direct contact, which causes short circuits. Finally, you have to splice the power supply cable into the floppy drive power line.

This is a simple procedure and should cause no problems for anyone who is even slightly technically minded. If you don't want to mess about cutting cables, then you can get the optional external power supply from Titan Designs for £39.95.



The Reflex Card mounted on the STE motherboard using the adaptor. There is very little room left in the ST case once the graphics card is in position, even the shielding has to be cut and pasted back into place.

Thunderbirds are go! And in full Crazy Dots 256 high res colour. A bit of a mouthful, but isn't it, oh, so... blissful!



ST FORMAT 45 APRIL



REFLEX GRAPHICS MACHINE: MEGA ST AND STE (WITH ADAPTOR)

PRICE: £224 FOR STE ADAPTOR FROM: TITAN DESIGNS CONTACT: 021 4141630

The Reflex Graphics Card is completely different to the Crazy Dots Card. While Crazy Dots is designed to provide true 24-bit colour graphics, Reflex enables you to enhance the high res mono graphics mode of your ST. It works when you're using the Atari range of high res monitors - SM124, SM125, SM144 and SM146 - on 21 inch A3 landscape and 15 inch A4 portrait monitors. Titan Designs supply a full range of large screen monitors, give them a call for current prices.

The board consists of a video controller, an advanced video shift register and has 128K of fast RAM on board to ensure swift screen

updates. There are also separate outputs for both Atari monitors and the large screen models, plus an input socket for the optional external power supply.

Fitting is reasonably easy if you have a Mega ST, as you only need a screwdriver and some pliers. If you have an STE though, you need to solder a few wires to provide a power supply for the board via the floppy drive power connection. You do not need to solder anything to the circuit board, so don't worry if you are a less than adequate soldering iron artist.

Once installed in your ST, the card is activated by booting with the Reflex software disk in the drive. An Auto folder program and an Accessory are installed enabling you to create your own configuration and save it back to the disk. If you have a hard drive, you can install Reflex in the boot partition.

The Reflex card offers resolutions of up to 1,024 x 960 pixels on the standard unmodified Atari monitors, 800 x 1,024 pixels on A3 portrait monitors and a staggering 1,024 x 1,024 on A3 landscape monitors. One problem with the higher vertical resolutions on an Atari monitor is that an interlace mode is used to produce the extra resolution. This can cause a shimmering effect with some fill patterns which can be annoying - we found no obvious problems on the SM124 and SM144 that we

used for the tests. On a standard SM124 at the highest resolution, text and icons are rather small, so a virtual screen can be held in memory which scrolls up or down when the mouse pointer nears the top or bottom edges of the screen - hence no loss of detail when working on large documents or graphics.

In practice, any GEM based program runs correctly when using the Reflex card, although some TOS programs do fall over. We tested Reflex with old standbys like First Word Plus, Calamus 1.09n and GFA Draft with excellent results - the larger on-screen working areas make using these programs a pleasure. For serious high resolution



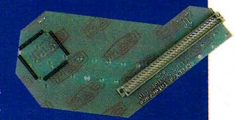
Fed up with space shuttle pictures, we've used a different image to grab from GFA Draft. Check out the increased working area, this grab has a res of 800 x 480 pixels.

work, the Reflex Graphics System must be considered to be a viable and cost effective solution to obtaining higher screen resolutions. Buy it.

STF Rating: 90%

STE, THIS IS YOUR ADAPTOR

Upgrade boards for the normal STFM and STE are usually impossible to fit, the only upgrade path being the sadly under-used cartridge port. If you have an STE, however, Titan Designs have solved the problem with a nifty adaptor card which sits on the 68000 processor - this enables you to use standard Mega ST cards. The adaptor takes its power from the floppy drive connection, although a dedicated separate supply is recommended. The adaptor board costs £25.00 and is available from Titan Designs, call 021 4141630 for more information.

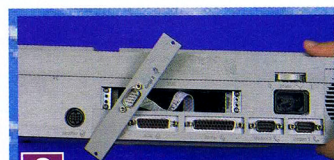


This is the adaptor which enables you to use any Mega ST add-on card in an ordinary STE. The adaptor plugs into the 68000 processor slot and is angled so that the add-on card sits over the SIMMs. The back of the STE has to be cut so that the card can be accessed to connect monitors and other devices. See the panel above for installation details.

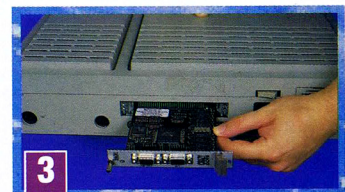
Installing the Crazy Dots 24-bit colour card



1 Installing the Crazy Dots 24-bit colour card on a Mega STE is dead simple. First, locate the VME slot cover on the rear of your Mega STE. It has a 9-pin D socket on it marked "Serial 2."



2 Undo the two screws holding the cover in place and unplug the serial port ribbon cable from the circuit board. Put the serial port in a safe place. Take note of the guide rails in the VME slot.



3 Insert the Crazy Dots card carefully into the guide rails and slide it in until it is flush with the back of the Mega STE, make sure the card is firmly in place. Tighten up the screw and the card is now installed.

SOMETHING FOR THE WEEKEND, SIR?

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WHOSE TURN IS IT ANYWAY?

It can be fun on your own, but it's even better with friends. Rob Mead strips off, gets out his Twister mat, then realises everyone's talking about multi-player games on the ST

You could be fooled into thinking that playing with your ST was a solitary activity, broken only by infrequent forays to the lav and a bit of social interaction with those odd people downstairs who cook your meals. Well, you couldn't be more wrong. There are masses of multi-player games for your ST, from shoot-'em-ups to footy games, god games to... footy games and shoot-'em-ups to... puzzle games! Yup, the shelves of your local ST emporium are positively heaving with the blighters.

Some games only enable you and a close pal to snuggle up in front of your ST, while others scream at you to invite coach loads of relatives from Inverness into your bedroom. "But how can I possibly connect all these people to my ST?" you cry.

Some games, like *Dyna Blaster*, come complete with an adaptor which you plug into your ST's parallel port. You can also buy adaptors from commercial outlets -

Special Reserve (☎ 0279 600204) can supply a four joystick version for only £7.99.

The other alternative is to hook up two STs with an RS232 null-modem or datalink cable - available from Tandy, Maplins and other reputable electrical dealers. Ultimately, you could invest in a modem which enables you to play games - and access the *ST FORMAT* BBS - via a conventional telephone line. The First Computer Centre (☎ 0532 319444) stock the Supramodem 2400 for £79.99 - see the full review in *STF* 42 (turn to page 58 to order your copy if you missed it), although you have to watch those phone bills if you plan to have extended game-playing sessions. For more information on hooking STs up to other machines, see our *ST Answers* modem feature in *STF* 36.

Here's a roundup of some of the best multi-player games you can get for your ST.

1 POPULOUS 2

PRICE: £29.99
FROM: ELECTRONIC ARTS
CONTACT: ☎ 0753 549442

The ultimate god game, *Populous 2* enables you to pit your wits against you mates via a modem or by connecting two STs together. The aim of the game is to charge around a series of islands helping your own particular band of worshippers to prosper while inflicting

■ And lo, Jimi of Hendrix said unto me "let me stand next to your fire." So he did and turned into a little bubbling puddle of molten flesh and sequins. Silly sod.

plague, pestilence and *Man about the House* re-runs on your enemy's population. A great, truly absorbing game that could very easily turn you or your pals into a bunch of slaving mega-lo-maniacs.

STF Rating: 95%



4 LEMMINGS

PRICE: £25.99
FROM: PSYGNOSIS
CONTACT: ☎ 051 709 5755

The world's most famous cutesy puzzle-'em-up, *Lemmings*, also has a wicked two-player option. You get a split screen view of the same level, but with two exits. The aim is to guide your lemmings to your exit, while being as obstructive as possible to your opponent's - you get a real kick out of watching his lemmings plummet to their deaths while yours scamper

home. While you gloat over your opponent's failure, however, you fail to realise he is doing the same thing to you - things can suddenly turn very nasty. Although you can use a combination of control methods, using two mice is the best - and most frantic - option.

STF Rating: 94%



■ Neighbours can become good friends. Just don't tell the lemmings that.

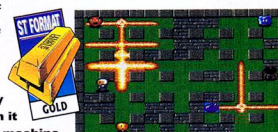
7 DYNA BLASTER

PRICE: £39.99
FROM: UBI SOFT
CONTACT: ☎ 081 343 9055

If you've always wanted to charge around blowing your mates up, this is the ideal game for you. Up to five people can play at once thanks to the adaptor which plugs into your ST's parallel port. The object of the game is to strategically place bombs around various parts of a level, revealing power ups and

destroying your opponents in the process. Naturally, the more power ups you collect, the better you become at disposing of your rivals. *Dyna Blaster* is fast, furious and incredibly addictive - proof, if any were needed, that the simplest ideas are very often the best.

STF Rating: 92%



■ Kaboom! *Dyna Blaster* is a very explosive game, especially when it blows the back off your machine.

Anything you can do, I can do it better

There's nothing like a bit of healthy competition, especially when you're the one that's winning. Here's what to say if the boot's on the other foot

- 1 I don't half fancy your mum.
- 2 This is crap. Didn't you read the review in *ST FORMAT*?
- 3 I think I'm going to be sick.
- 4 Can you smell dog poo or is that your new aftershave?
- 5 Was that the phone?
- 6 My dad could easily beat up your dad.
- 7 You've got a bogie on your top lip.
- 8 Can we play *Space Invaders* instead?
- 9 This Batman joystick's very manly, but utterly crap.
- 10 You're sad, you are. You must play this game all day and have no social life whatsoever. Is that your anorak on the back of the chair?

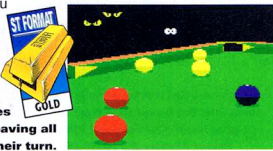


2 ARCHER MACLEAN'S POOL

PRICE: £25.99
FROM: VIRGIN
CONTACT: ☎ 081 960 2255

We gave this game a massive 95% in *STF* 43 and it's even better in multi-player mode. Up to eight players can take part enabling you to set up your own nail-biting tournaments with a choice of UK eight-ball and US nine-ball pool.

■ "You know you're not doing very well when the pub landlord switches the lights out and goes to bed, leaving all the punters waiting to take their turn."



STF Rating: 95%

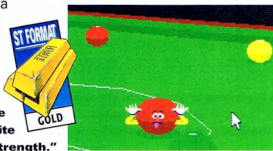
5 JIMMY WHITE'S WHIRLWIND SNOOKER

PRICE: £25.99
FROM: VIRGIN
CONTACT: ☎ 081 960 2255

Jimmy White is, if you didn't know, Pool's maiden auntie and it shares the same superb graphics and stunning samples. Because snooker is a more complex game than pool, Jimmy White's gameplay can seem cumbersome at times, lead-

ing to some surprise losses against the four ST opponents. The two-player mode is dead easy to get the hang of and, if you're crap, you can play safe in the knowledge that you're not going to get kicked off the table by some irate snooker hall owner after a few hours play.

STF Rating: 94%



■ "Get on with it. What colour are you going to pick?" "Well, I like them all, really, although I'm quite partial to lemon." "God, give me strength."

8 VROOM

PRICE: £25.99
SOFTWARE HOUSE: UBI SOFT
CONTACT: ☎ 081 343 9055

While the Lotus games opt for a split screen in two-player mode, Vroom enables you to plug in another ST using the modem-linking option – this way you get to hog a whole monitor to yourself and you're left with little idea of how the competition is doing – or

how crap they are at steering – unless you see them spinning off the track in a plume of smoke some distance away. Graphically superb with some excellent sound effects, Vroom is one of the most realistic racing sims ever – just the antidote to all those frustrating hours spent in jams on the M25.

STF Rating: 92%



■ "Out the way, can't you see I'm in a hurry? I'm going to miss that airship, I know it. Trust it to be early for once. Road hog!"

3 BLOODWYCH

PRICE: £29.99
FROM: BEAUJOLLY
CONTACT: ☎ 0737 222003

Bloodwych is like *Dungeon Master*, but with a split-screen two-player mode. This means that you and a pal can both wander around Bloodwych gathering the Sanguis crystals and fending off a variety of malevolent monsters. Unfortunately, at the beginning of the game you can be several dungeon

levels apart and have to find each other to make your adventure easier. Things are made simpler with the help of various characters you can talk to using the communication system. A classic RPG only available as part of Beaujolly's *Power Pack* compilation.

STF Rating: 95%



■ "Well, I'm off down the pub with Mr Bluesuit." "But he's not wearing a blue suit." "He's got a cold." "I see."

6 POWERMONGER

PRICE: £29.99
FROM: ELECTRONIC ARTS
CONTACT: ☎ 0753 549442

From Bullfrog – the makers of *Populous* and *Populous 2* – Powermonger continues the tradition of enabling you to hook up STs via modem and datalinks. This time round you and a pal do battle over a 3D map in a bid to control over 195 territories, with one territory to be won in each game. Each has

to blunder around attacking the other's villages, recruiting peasants and inventing new weapons – you can turn the game into even more of a challenge by opting to include two computer opponents as well. Powermonger is an exciting proposition – hook up that modem and get rampaging.

STF Rating 93%



■ "Mum, do you like my plumage?" "Rape and pillage, that's all you ever think about." "But do you...?" – slap!

9 KICK OFF 2

PRICE: £25.99
FROM: ANCO
CONTACT: ☎ 0322 292518

Kick Off 2 succeeded in improving on the original with a whole host of additional features including different skill levels and the ability to design your own strip. Up to four players can play at once which makes for some serious mayhem

on the pitch. Controlling your players is a doddle and the Action Replay facility means you can gloat over your mates' lousy defensive tactics time and time again. Kick Off 2 has great graphics, wonderful samples and is incredibly playable. If you haven't played it, you really haven't lived.

STF Rating: 92%



■ "Oh, not you again." "Mind you, they don't half bite in the summer." "What?" "Nets." "You mean gnats." "What have bicycles got to do with anything?" "I give up."

One little, two little, three little indians

There are plenty of multi-player games on the ST, here's a round up of the best of the rest

Name	From	Price	Reviewed in	STF Rating
Beach Volley	Hit Squad	£7.99	STF 7	62%
Beast Busters	Activision	£25.99	STF 30	64%
Bonanza Bros	US Gold	£25.99	STF 35	72%
Combo Racer	GBH	£7.99	STF 34	61%
F16 Combat Pilot	Action Sixteen	£9.99	STF 27	68%
Forgotten Worlds	US Kixx	£7.99	STF 25	71%
Gauntlet 2	Kixx	£7.99	STF 27	86%
Gazza 2	Empire	£24.99	STF 20	86%
Hero Quest	GBH	£9.99	STF 24	78%
Jupiter's Masterdrive	Action Sixteen	£9.99	STF 34	62%
Lotus 3: The Ultimate Challenge	GBH	£9.99	STF 41	75%
Matrix Marauders	Psygnosis	£9.99	STF 19	73%
Mercs	US Gold	£19.99	STF 25	61%

Name	From	Price	Reviewed in	STF Rating
Oh No! More Lemmings	Psygnosis	£25.99	STF 32	82%
Pang	Hit Squad	£7.99	STF 18	88%
Pictionary	Hit Squad	£7.99	STF 6	72%
Pro Tennis Tour 2	UBI Soft	£25.99	STF 24	73%
Quadrel	Loricel	£24.99	STF 23	74%
Race Drivin'	Domark	£29.99	STF 34	63%
RBI 2 Baseball	Hit Squad	£7.99	STF 27	76%
Smash TV	Hit Squad	£7.99	STF 31	74%
Steel Empire	Millennium	£29.99	STF 36	71%
Stormball	Millennium	£25.99	STF 24	71%
Supercars 2	GBH	£9.99	STF 24	74%
SWIV	Storm	£24.99	STF 22	78%
Tetris	Infogrames	£19.99	STF 24	69%
Z-Out	Rainbow Arts	£24.99	STF 28	53%

10 SENSIBLE SOCCER

PRICE: £25.99
FROM: RENEGADE
CONTACT: ☎ 071 702 3644

Despite the inevitable comparisons with *Kick Off 2*, *Sensible Soccer* remains the best footy sim you can get for your ST. Graphically superb and immensely playable, the only slight niggle is a tricky control system, but you soon get used to it. The multi-player mode enables

you to create a whole plethora of weird and wonderful footy leagues and gives you that wonderful gloaty feeling associated with slaughtering Sunday Leaguers 10-0. With the additional features included on V1.1, there's now no excuse whatsoever for not turning into a football nut.

STF Rating: 91%



■ "Graham Taylor, Graham Taylor, Graham Taylor he's our king..."
Sadly deluded England fans sing tributes to their hero.

12 KICK OFF

PRICE: £19.95
FROM: ANCO
CONTACT: ☎ 0322 292518

Although it was graphically inferior to *Microprose Soccer* when first released, *Kick Off* has proved to be the most durable; the sheer addictiveness of the gameplay winning through. You control individual players from an overhead perspec-

tive, while your ST looks after the rest of your team. Features include the ability to change weather conditions and pitch types. The two-player mode enables you and a pal to take part in a series of championships, with you controlling opposing teams on the same screen. A footy classic.

STF Rating: 88%



■ "Ere we go, 'ere we go, 'ere we go..."
"Where are you going then?" "Ere we go, 'ere we go, 'ere we go-o." "Well, you must be going somewhere." "Ere we go, 'ere we go..." "It's alright, it doesn't matter."

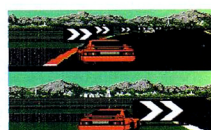
14 LOTUS ESPRIT TURBO CHALLENGE

PRICE: £9.99
FROM: GREMLIN
CONTACT: ☎ 0742 753423

A classic racing sim that helped rejuvenate the genre when it was released in 1991. Your job is to rescue Professor Snuffle from the evil clutches of... erm, actually you have to charge about around a series of increasingly complicated tracks

without crashing, cutting corners or antagonising the pit crew. The two-player option divides the screen into halves, enabling you and a pal to play simultaneously without turning the back of your ST into Spaghetti Junction. Not quite in the same league as *Vroom* or *Crazy Cars 3*, but still a great racing sim.

STF Rating: 86%



■ "Pass me the flask, dear." "Do you want a butterfly cake?" "What a nice view... oh, there's a big red car above us." "I expect it's god on his way to church." "Yes, dear."

11 STREET FIGHTER 2

PRICE: £27.99
FROM: US GOLD
CONTACT: ☎ 021 625 3366

For once, a game that managed to live up to the hype, *Street Fighter 2* pits some of the planet's greatest brawlers against each other in a battle for the title of World Warrior. Plug in two joysticks to take on your kick-boxing grandmother or Hell's Angel brother as you fight

your way around the world. Victory depends on inflicting the maximum number of killer blows on your opponents, while they're still trying to do up their bootlaces. A fantastic game for the football hooligan that's lurking in all of us.

STF Rating: 91%

■ All around the world, people are united in the belief that they can give each other a good kicking.
Street Fighter 2's multi-player option.



13 POPULOUS

PRICE: £10.99
FROM: BULLFROG
CONTACT: ☎ 0483 579399

Bullfrog's campaign to get more multi-player games on the ST started with this, the first ever god game. Again you have to help your tribe of followers prosper in an unforgiving land, ever at the mercy of a rival god, played either by your ST or by one of your mates using

the familiar datalink connection. *Populous* is an extremely easy game to get into, but hard to master - your success or failure depends on how good you are at doing down the opposition while protecting your own people. A classic two-player game now available on budget.

STF Rating: 88%

■ Welcome to your new Wheelbarrow home.
As you can see, the estate has extensive facilities and only suffers minor vandalism from local deities.



15 RAMPART

PRICE: £25.99
FROM: DOMARK
CONTACT: ☎ 081 780 2222

Incredibly popular in Royal circles, *Rampart* is a mediaeval strategy/action game with castles, invading armadas and large cannons. You're given a set amount of time to reinforce your castle's walls and position your cannon, before battle commences and you have to lob cannon balls at the enemy ships. In

two-player mode your job is to demolish both your ST's armada and your human opponent's own castle - the only problem is they're also trying to destroy yours. Great samples and graphics, combined with straightforward gameplay makes this an ideal blast with a long shelf-life.

STF Rating: 85%

■ Keeping up with the Jones's can be an expensive business - all that stone cladding must have cost you a fortune.



GO ON-LINE

On-Line Entertainments is Europe's only leisure multi-user network and offers on-line services like games and a chatline - "Forum." Services offered by the company include *Air Warrior* (a multi-user flight sim), *MUD 2* (a dungeon-based role-playing game) and *Federation* (a space trading game in the *Elite* mould). Subs cost £9.99 a month or £2 an hour, plus £1.53 per hour for connection to one of their 100 local nodes. Phone calls are charged at 68p per hour locally, although costs rise dramatically if you want to contact On-Line's offices direct on ☎ 081 558 6114.

LONG DISTANCE WAGGLING

We asked some ST gamers via the STF BBS (☎ 0225 461330) what their experiences were of playing games using their modems. This is what they had to say

"I've tried *Populous*, *Populous 2* and *Powermonger* over the modem so far. Oddly enough, *Populous* turned out to be the best one."

Richard Lim, London

"I have played *Powermonger* via a null-modem link, and was running at 19200 baud with no problems

at all. It does make the game more interesting."

Graham Murphy, Surrey

"On-line's *Air Warrior* is the ultimate in flight sims - real time dogfights against human opponents, it's totally addictive."

Daz Smith, Preston, Lancs

"Like many other people who are into comms, I take part in *Space Empire Elite* via Internet at Aylesbury. We compete as a galaxy against other galaxies based on other boards throughout the country and as far away as Germany and Sweden. To use a full quota of five turns per day

means being on-line for about ten minutes, so it probably won't break the bank."

Craig Oldfield, Manchester

"One of my favourite pastimes is playing on-line games on Bulletin Boards. It's more fun than playing a computer because you're up against real people with real personalities."

At the Vault BBS (☎ 0726 8490000) I've got nine games running including *Galactic Empire*, *Final Frontier*, *Space Ships of Death* and *Assassin*. They are all great fun to play, especially when you kill off someone you really like."

John Whatty, The Vault BBS

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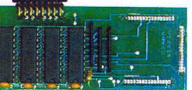
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KANT U SPELLE?



**Can't
bring
yourself
to spell
properly...
properly?**

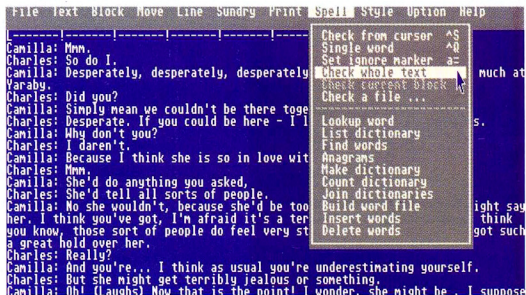
Fear not,

**Clive Parker
is here to
help - he has
hand-crafted
a dictionary
for Protext on
this month's
Cover Disk
and shows
you how to
use the spell
checker and
some of
Protext's
editing
functions**



If you can remember *ST FORMAT* 41, then you can also recall the Cover Disks - you know, one of them had *Air Support*, *Hyperbase* and *Soundlab* on it. The other disk had *Protext* along with options like *Mail Merge*, *Search* as well as a tutorial. Because of the lack of disk space, though, we didn't include any dictionary files to run with the spell checker. This is why we have come up with a small, but useful, dictionary of our own for you to use. It was created from an ASCII file using the *Make Dictionary* option of the *Protext* Spell menu. The dictionary has 25,600 words in it and is suitable for everyday use.

Install the dictionary following the instructions in the box on the opposite page and you can look forward to creating spelling mistake-free documents. There is a *README* file included on the Cover Disk which explains how to install the dictionary. The program can check single words, blocks of text, the complete text in memory or a file on disk. To check the spelling of a single word, highlight it by dragging the mouse pointer over it while keeping the left button pressed. You can then either press



■ The Spell menu contains all of the dictionary functions available in Protext. Everything from checking a single word to creating new dictionaries from text files is done from this menu.

<Control> <Q> or go to the Spell menu and select the *Single Word* option, the word is then run through the dictionary. If the word is in the dictionary, a message appears telling you that it is cor-

**The program can
check single
words, blocks of
text, the complete
text in memory or
a file on disk**

rect. If the word isn't listed, then an option appears enabling you to add the word to the dictionary. Exactly the same process is used to check a block of words. Mark the block of words to check, and select *Check Current Block*. A list of unknown words is generated and can be

added to the *USER.DCT* file. The checking page has a variety of options; pressing <S> stores the word, <I> ignores it, <V> enables the section of text containing the word to be viewed in context, <C> enables the word to be changed, <L> looks up similar words in the dictionary and moves back through a list of unknown words.

The options for checking the complete file are exactly the same as when you're checking a single word, although a larger list is generated for checking.

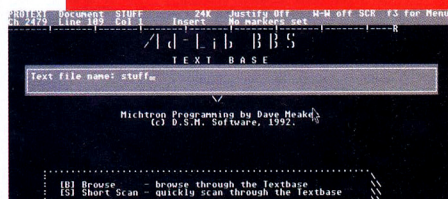
Formatting

Let's look at some of the lesser known features such as formatting text and text editing commands.

Formatting is the term used to describe the layout of the text on the page or screen - the tidier the document the better. *Protext* can format the text automatically so that it looks exactly like what you want. The main feature is called word wrap - this automatically moves words that over-run the end of a line down to the start of the next line. Word wrapping can be switched off from the Option menu or by pressing <Control> <W>. In this case the text being typed in continues to be printed on the same line until <Return> is pressed. It is best to leave word wrap enabled most of the time, unless you particularly want to format text manually.

In most cases your text is formatted like a book, with both the left and right edges of the text sticking to the margins. This is the default mode of the program and is called right justification. It is created by *Protext* automatically adding extra spaces between words. This mode can be turned off

FIRST STEPS IN DICTIONARY CREATION



Follow these simple steps if you want to create your very own dictionary

Protext has a built-in function that enables you to create dictionary files from text files. To do this, go to the Spell menu, select the *Make Dictionary* option and a command line appears asking for the name of the text file you want to convert - enter the name of the file, followed by the name you are going to give the dictionary and press <Return>. The program converts the entire file into a dictionary file which can then be joined to the main dictionary. Using this method, you can add any kind of dictionary in any language as well as specific technical dictionaries. One word of warning, *Protext* has trouble converting files over 1,000 words long, so you have to cut down large files by splitting them into blocks.

■ Any text file can be converted into a dictionary file by Protext - even text capture files from comms software can be used and converted. When merged with the main dictionary, all unknown technical words, names and places become part of the file.

ACCENTS AND SPECIAL CHARACTERS

Protext can handle foreign languages and enables you to create entire dictionaries - this is because you can produce special characters and accents using the following key combinations

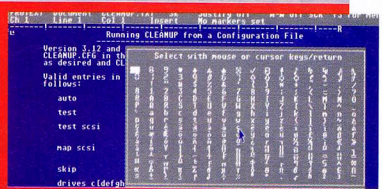
Accents: Pressing <Alternate> with the following keys produces these characters:

<~> produces an umlaut
<%> produces a ring
<^> produces an acute accent
<^> produces a circumflex
<^> produces a grave accent
<~> produces a tilde

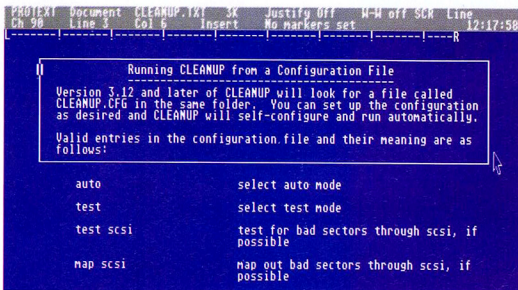
Pressing <Alternate> and the following keys

produces special characters:

<C> produces c cedilla
<E> produces ae diphthong
<N> produces n tilde
<O> produces o slash
<H> produces half
<Q> produces quarter
Left arrow produces a left arrow
Right arrow produces a right arrow
Up arrow produces an up arrow
Down arrow produces a down arrow
<<> produces French opening quotes
<>> produces French closing quotes
<?> produces inverted question mark
<!> produces inverted exclamation mark



■ This is the Choose Character window which is selected from the Text menu. Clicking with the mouse on one of the characters in the window selects it and enters it into the document where your cursor is positioned.



■ Adding boxes to text can make areas stand out to attract the reader's attention. Protext enables you to enter boxes and lines into the text.

by pressing <Control> <J>, making the right edge of any text entered uneven. Pressing <Control> <J> toggles right justification back on.

If you want to reformat text when editing a file, Protext handles the reformatting automatically through the Auto Reformat function. This means that if you add or delete words in a paragraph, it is automatically reformatted. Pressing <Shift> <Control> and <R> toggles it on or off. Pressing <Control> <F> at the start of a paragraph reformats it, while <Shift> <Control> and <F> can reformat a paragraph from any position in the text.

Text can be centred by pressing <Control> <C> or by selecting Centre Line from the Sundry menu - this is dead handy when you are formatting headings or chapter titles. Of course, if you reformat the file using a different line length, then the text is no longer centred. You can make Protext compensate for this by adding the characters ">CE" at the start of the line. This is called a stored command and makes sure that your text is always centred when you reformat a file or paragraph that has a different width.

The spaces Protext inserts between words when justification is turned on are called soft spaces - these are removed automatically

whenever a paragraph is reformatted. Spaces created by pressing the Spacebar are called hard spaces and are not removed when you reformat your document.

In exactly the same way, word wrap creates soft returns when moving text down a line while the <Return> key inserts the hard returns which Protext uses to detect the end of a paragraph.

When justification is

on, you can insert a special kind of space when you want to keep specific words together by soft spaces, these are called non-break spaces. They can be entered into the text by pressing <Control> <N> and then pressing the Spacebar. A non-break hyphen can be used to prevent a hyphenated word being split over two lines, pressing <Control> <N> and <-> enters it into the text.

Non-break spaces appear in Protext as small triangles, while a non-break hyphen is represented by a hyphen with a vertical line drawn through it.

Line drawing mode

Protext has a special mode for creating boxes for text on Epson, IBM and Laserjet compatible printers. This is extremely useful when you want to create tables, charts and boxes around text.

You can enter the Line Drawing mode by pressing <Control> <F7> or <Control> <F8>. <F7> mode uses standard line graphics while <F8> mode enables

Manuals for sale!

If you're interested in getting the full manual for Protext 4.3 or upgrading to Protext 5.5 then you can use the Armor mail order form on page 34 of ST FORMAT 41 - turn to page 58 if you missed it. If you prefer ordering by phone or would like further information, call 0733 68909 or write to Armor Ltd, 611 Lincoln Road, Peterborough, PE1 3HA. The Protext 4.3 manual and extra software costs £20 while the upgrade to Protext 5.5 is £55.

lines to be created using a standard ASCII character. When you're in Line Drawing mode, press <Alternate> and the appropriate cursor arrow keys to draw lines in the direction you want. By pressing <Control> <F7> or <F8> you exit the line drawing mode. If you wish to erase a line, press <Control> <F8> and press the Spacebar, then go over the line using <Alternate> and the appropriate cursor key. **stf**

How to install all those lovely words



1

Copy the PRO.DICT.TOS file from the Cover Disk to a blank formatted disk, then double-click on it to extract the dictionaries. Once the files STFORMAT.DCT and USER.DCT have been extracted, they can be copied to your Protext working disk, making sure that they are in the same directory as PROTEXT.PRG. Now load Protext and press the right mouse button to bring up the menu bar - go to the Option menu. Select the Edit Configuration option and then press <M> and then <Return> to go to the Main Configuration menu.

2

Once at the Config Main menu, press <S> and <Return> to go to the Spelling Checker options menu. Once here you must change the name of Dictionary One to STFORMAT.DCT, press <I> and <Return> to edit the line. Pressing <Esc> clears the old dictionary name, enabling you to enter the new name. Enter STFORMAT.DCT in the command line and press <Return> and the new dictionary name is entered. Press <Esc> twice to go to the top menu of the configuration program, press <S> and <Return> to save to disk. Press <Esc> to return to Protext.

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AMONG THE PINS

Ever think of taking your printer to pieces to find out why it doesn't work? Clive Parker takes a dot matrix printer apart to explain how it does

THE CONFESSIONS OF A PRINT HEAD

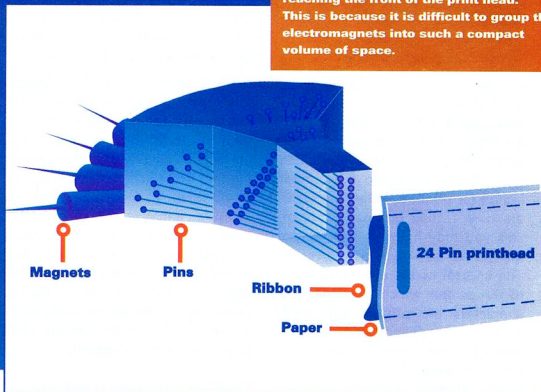
The most common printers have print heads with either nine or 24 pins – 9-pin printers have a single column of pins while a 24-pin machine has two columns of pins side by side and slightly offset from each other. The PT (printer timing) signal activates an electromagnet which fires the pin away from itself towards the ribbon, it then hits the paper and transfers the ink. The pin returns to its resting position thanks to a small spring. The column of pins firing in a controlled sequence then build up the image of the character. The print head is moved from side to side across the paper by the carriage which slides on a pair of low friction rails called guide bars.

The step motor moves the print head by means of a rubber belt and ensures that it moves in the correct increments for the number of pins; 1/240th inch for

9-pin printers and 1/360th inch for 24-pin machines. Pins are fired every other increment to ensure that they aren't used continuously.

THE 24-PIN PRINT HEAD

■ The pins in a print head are not fired directly onto the ribbon, instead they are guided through three masks before reaching the front of the print head. This is because it is difficult to group the electromagnets into such a compact volume of space.



In our "finding out how the insides of things work" series, this month we investigate the dot matrix printer.

The print head of a dot matrix printer (DMP) contains wires which are driven against a ribbon to strike the paper and make a mark. By striking the paper in sequences controlled by software, letters or graphic images are built up. Printers are now available with nine, 24 and 48 pins; the higher the number

of pins, the better the print quality. 9-pin printers can print text in near letter quality (NLQ) mode to produce reasonable text output, while 24-pin and 48-pin printers have letter quality (LQ) modes which are almost indistinguishable from typewritten text.

Printers consist mainly of the CPU and the print head. The CPU converts the information sent by the ST into data which can then be passed on to the print head as a set

of instructions. This controls which pins are activated and in what order, enabling a graphic image or text to be built up on the paper. The data sent by your ST to the printer is stored in an area of RAM in the CPU called the printer buffer. When the buffer has been filled with data, it is cleared out and printed. The next batch of data can then be sent by your ST and the printer's buffer can then be emptied

by your ST and printed – this is usually

done at the end of a document. The buffers in most printers can be expanded by adding extra RAM. The larger the printer's buffer, the quicker data is sent by the ST, enabling your ST to get back to other tasks. It is possible to install a printer buffer utility in the RAM of your ST to decrease the time your ST is idle. Most PD libraries – see the directory on page 91 – supply printer spooler utilities.

Computer data consists of both print data and control codes. The print data contains the ASCII

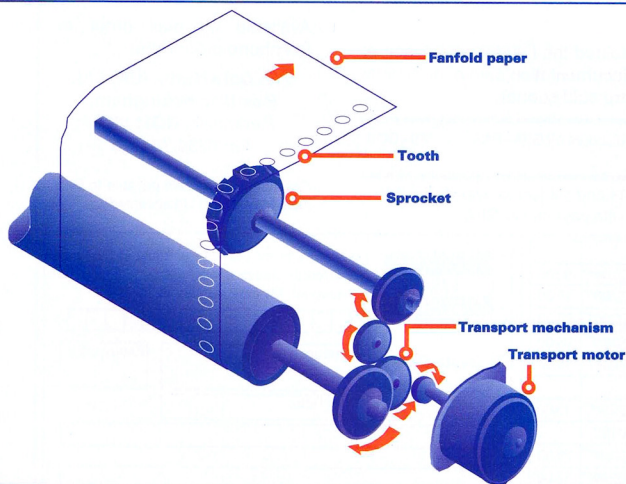
PAPER TRANSPORT

Printers also use a step motor which moves the paper through the printer. This is called the transport mechanism (nothing to do with *Star Trek* or anything like that). This can either work as a friction feed for single sheets or as a tractor feed for continuous perforated paper.

Tractor feed uses a special mechanism which pulls the paper through the machine using toothed sprockets – these poke through holes in the edges of the continuous paper to keep the movement as precise as possible. The friction feed works in the same way as a typewriter by using a platen – the paper is gripped between the platen and a roller and is moved forwards by the step motor.

TRACTOR FEED

■ This is the complex arrangement of gears, wheels, sprockets and stuff which drags the continuous paper through your printer and dumps it in a heap on the floor. It never ever folds properly, does it?





■ This was the top rated 24-pin printer in our printer round-up in STF 43. Now you've seen the picture, read all about how its internals work. Yum! Yum!

numbers of the characters to be printed, or information relating to bit-mapped graphic images. Each bit image character is stored in the printer as a character string which the CPU converts into the correct image for printing. Individual printers vary in their bit image control, and you may have to refer to the manual to set your ST correctly. The control codes are instructions to the printer which alter the way characters are printed out; bold, italic, double density and different character sets can be controlled from software via control codes. Most printers contain sensors which determine whether it is

ready to print or not. The "paper out" sensors can detect whether the printer has any paper inserted or if the paper has run out. If so, the printer usually sounds a warning and turns itself off-line – that is it disables itself until paper is inserted. Because the pins in the print head are sensitive to heat, temperature sensors in the step motor can slow down or stop printing to prevent overheating. This is controlled by the printer timing signal (PT signal) which controls each one of the pins individually.

Hints for buying a printer

If you want to buy a printer,

PRINTING JARGON

BUFFER: area of RAM where data is stored prior to printing.
CPU: central processing unit.
DIP SWITCH: dual-inline-package switch – tiny switches which change the default settings of the printer.
DPI: dots per inch.
FORM FEED: advances the paper to the start of the next sheet.
LINE FEED: advances the paper by one line.
MANUAL: usually a badly written, badly translated book that supposedly tells you how to work your printer.

OFF LINE: The printer is not ready, and can't print.
ON LINE: the printer is ready for printing. Go ahead. Use it.
PPM: pages per minute, normally this term is associated with laser or inkjet printers.
RESOLUTION: the number of dots per inch (DPI) the printer is capable of printing.
STEP MOTOR: a special motor that moves in extremely small and precise increments under software control. The motor is used to move both the paper and the print head.

whether dot matrix or inkjet, make sure that it is Epson compatible or has an Epson emulation mode. All software with print options is supplied with an Epson printer driver, so if you choose an Epson compatible printer you are guaranteed to be able to print.

Decide if you want your printer to produce carbon copies or not, as this is only possible with a dot matrix printer. Most dot matrix printers can handle both single sheet and continuous paper, inkjets, on the other hand, can usually only cope with single sheets.

Buying a cut-sheet feeder with the printer can sometimes be

less expensive than buying one at a later date. You should get a printer cable supplied with the printer – check before you leave the shop. Mail order companies generally supply a cable free of charge, shops usually charge you for it.

Don't buy a serial printer. The ST has always had problems driving serial printers correctly and you are unlikely to find suitable printer drivers with your software. The majority of printers have parallel interfaces or both parallel and serial capability, never buy one with just a serial interface, even if it only costs you £10. You might as well just burn the tenner. **stf**

GFA – BASIC 3.5

GFA and ST Format gave away the full versions of GFA-Basic Interpreter, GFA-Assembler, GFA-Raytrace FREE on earlier cover disks. Our policy was simple. Let ST Format readers decide which is the best programming language and CAD program by giving them away to try FREE. This marketing policy worked, as thousands of ST Format readers now use GFA-BASIC and GFA-Draft.

Those ST Format readers who have not yet obtained the full documentation at a fraction of the price, should do so now. The documentation only offer expires June 1st 1993 or earlier if our existing stocks are sold sooner.

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Unique additional standard features include FLASH ROM 'future proof' technology and LAYOUT™ - a powerful document description language. The LP1200's unique internal FLASH ROM, which holds the printer controller firmware, can easily be updated as new developments in technology occur. This protects the investment you make in buying a Ricoh LP1200. Other manufacturers would require you to buy a new printer! Internal FLASH ROM and industry standard FLASH ROM IC cards can also be used to permanently store fonts, macros, graphics and extra emulations. Again, unlike the competition, the LP1200 includes LAYOUT™ a powerful document description language as standard, which offers unique opportunities to develop custom made printing systems. Forms and document templates can be designed and stored electronically in the LP1200's FLASH ROM, alleviating the need for pre-printed forms!

The LP1200 comes complete with a 100 sheet A4 paper tray and the facility to feed single sheets of paper and card up to 157gsm. An optional extra universal feeder provides the facility to automatically feed up to 150 sheets, from sizes of 98mm x 148mm to 216mm x 356mm in size, at weights of up to 158gsm. It can also feed up to 15 envelopes, overhead transparencies and labels automatically.

THE LP1200 IS A GENUINE LASER PRINTER AND NOT AN LED PRINTER. MAKE SURE YOU CHECK THE COMPETITION!

See how the Ricoh LP1200 compares to its Laser Printer Competitors

FEATURES	EPSON LaserJet III	HP LASER JET III	M/MAN TALLY M7944	IBM 4029 Model 010	RICOH LP1200
Average Sheet Price (incl. VAT) *1	£3.69	£3.69	£3.69	£3.69	£3.69
Official RRP (excl. VAT)	£1945	£1179	£1099	£1099	£1195
Maximum resolution in dots per inch	300 x 300	300 x 300	300 x 300	300 x 300	400 x 400
Windows 3.1 Driver @ 400 dpi	YES	YES	YES	YES	YES
Print Speed	6ppm	4ppm	4ppm	6ppm	6ppm
Straight Paper Path	YES	YES	YES	YES	YES
PCL 5 Printer Command Language	-	YES	YES	-	YES
HP-GL/2 Vector Graphics included	YES	YES	YES	YES	YES
Resolution Improvement/Enhancement	YES	YES	YES	YES	YES
Standard RAM	0.5Mb	1Mb	1Mb	1Mb	2Mb
Full A4/300 dpi graphics with standard RAM	-	-	-	-	YES
Warm Up Time	<45 secs	<40 secs	60 secs	35 secs	<45 secs
First Page of Text Output	<45 secs	<40 secs	34 secs	20 secs	<45 secs
Document Description Language included	YES	YES	YES	YES	YES
Flash ROM	-	-	-	-	YES
Upgradeable Firmware	-	-	-	-	YES
IC Card Slot	YES	-	-	YES	YES
Scalable Resident Fonts - in HP Lj III Emulation	-	8	8	0	8
Resident Bit-Mapped Fonts	11	14	14	16	14
ASFA Intelligent Scalable Font Technology	-	YES	YES	YES	YES
HP LaserJet III Emulation included	YES	YES	YES	YES	YES
EPSON FX Emulation included	YES	YES	YES	YES	YES
PrePrinter Emulation included	YES	YES	YES	YES	YES
Standard Tray Capacity	100	70	100	200	100
Protective cover on standard tray	YES	YES	YES	YES	YES
Cost per copy**	1.65p	2.00p	1.71p	1.64p	1.65p
Min-Max Paper Weight in gsm	60-157	60-105	60-120	60-131	60-157
Able to print on OHP Film	YES	YES	YES	YES	YES
Able to print on card (157gsm - Manual Feed)	YES	YES	YES	YES	YES
Standby - Noise Level	<40dB	31.7dB	<35dB	30 dB	<38dB
Printing - Noise Level	<50dB	43.3dB	<46dB	30 dB	<48dB

*Based on manufacturers' claims

**Based on manufacturers' claims

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Before you decide when to buy your new laser printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or consumables, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. We have been established for almost 14 years and, with our unrivalled experience and expertise, we can now claim to meet our customers' requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest FREE literature and begin to experience the 'Silica Systems Service'.

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"WINDOWS MAGAZINE" JULY 92

"What to Buy for business" OCTOBER 92

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LAA 5262	2Mb RAM Module	£100.00
LAA 5210	Developer/Toner Cartridge	£55.00
LAA 5225	OPC Cartridge (Drum)	£89.00
LAA 5312	A4 Paper Tray (100 Sheets)	£35.00

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To: Silica Systems, STOR-0483-75, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

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Which computer(s), if any, do you own? _____ 75N

E&OE * Advertised prices and specifications may change - Please return the coupon for the latest information.

ST ANSWERS

Another pile of mail sits steaming on the mat, each letter a cry for help from an anguished reader. Clive Parker puts on his BNC suit and bravely wades into the quivering morass. Send your ST related problems to ST Answers, ST FORMAT, 30 Monmouth Street, Bath, Avon, BA1 2BW. Please indicate the type of problem on the envelope to help us when we're sorting them all out

THE ICONS

BEGINNERS



Got your ST, got your L plates and looking forward to starting up - look out for this icon if it's not going too smoothly.

COMMS



Modems can be the cause of many stresses, the main one being worrying about the size of your next phone bill.

DISKS



Have you also got problems with your floppy or hard disks? Look out for this icon and read our inspired solutions.

GAMES



If it's cheats you want, turn to Gamebusters on page 54. If not, we answer your general games queries here.

GRAPHICS



Hopelily the world of digital art has inspired you. If, on the other hand, it has given you a headache, look for this icon.

HARD DRIVES



Find out how to take good care of your hard friend by reading about other people who, sometimes, don't.

PRINTERS



Whether it's a mono laser or a colour dot-matrix, your printer is a piece of equipment in its own right. Don't ignore it.

PROGRAMMING



On top of this month's feature on programming, you can follow the antics of your fellow programmers here.

SOUND



If music is your life, then you should have a framed reproduction of this icon hanging above your ST.

ST PROBLEMS



If you can't place your problem under any of the above labels, take a look at this icon - it covers pretty much everything.

Tip for the top



Neil Davies of Dudley has a great tip for Intro Concept.

"If you use Intro Concept (a demo and intro creator) from a PD library, you know that you can only use about seven tunes to go with your work - and they're not very good. There is a way, however, to get more tunes to choose from. Floppyshop (0224 586208) have a series of disks containing interrupt driven tunes -



meaning you can double-click on them from the Desktop, they play in the background and you can then get on with something else. They cost £3.95 each.

"To use these tunes with Intro Concept, follow this procedure; format a blank disk and create an Auto folder. Copy the tune you wish to use into the folder. Load Intro Concept and create your intro or demo, but click on Music Off to disable the feature. Copy your demo to the same Auto folder as the tune and then write-protect the disk. When you reset your machine the

tune loads and plays and is followed by the demo. You can create as many demos as you like using this method.

"The Floppyshop disks which contain a number of interrupt driven tunes are Budutl.06, Budutl.11 and Budutl.19."

DMA query 44



I have one of the early Atari STs which is now nearly five years old. I would like to buy a hard drive for it but I know that some of the early STs have a faulty DMA



GFA SURGERY

If you have been queuing up for a minor bit of GFA surgery for the last few years, queue no longer for this could be your lucky day as Mac Marsden operates

Boxing clever

How can I add a routine to my program which enables me to draw a box or rectangle on the screen using the mouse? I want it to set the start and end positions.

P Errington, Liverpool

stf: There are many different ways of achieving the result you are after, here are just two of them;

Program One
COUNT=0

```
X=0
Y=0
X1=0
Y1=0
DO 1 * [1]
DO 1 * [2]
LOOP UNTIL MOUSEK
IF MOUSEK=1 AND COUNT=1
X1=MOUSEX
Y1=MOUSEY
ADD COUNT,1
ENDIF
```

```
IF MOUSEK=1 AND COUNT=0
X=MOUSEX
Y=MOUSEY
DRAW X-10,Y
```

```
DRAW TO X-1,Y
DRAW TO X-1,Y-10
ADD COUNT,1
ENDIF
PAUSE 10
LOOP UNTIL COUNT>1
BOX X,Y,X1,Y1
GRAPHMODE 3
DRAW X-10,Y
DRAW TO X-1,Y
DRAW TO X-1,Y-10
```

The above program has two loops;

*[2] waits until the left button is pressed and then *[1] holds the main code which on first pressing a mouse button takes the position of the mouse and puts it into the variables X and Y, this is the top left corner of the box. The second time the mouse is clicked, the bottom right hand position is put into X1 and Y1. As the variable COUNT is greater than one, the main loop is exited and the box is drawn. The PAUSE statement is included to allow a time separation in between the two mouse operations, otherwise the box variables could take on the same values.

We have used DRAW statements to mark the position of the top left corner of the rectangle and GRAPHMODE 3 to XOR, which enables the marker to be over-written, removing it entirely from the screen.

Program Two

```
DO
-EVNT_BUTTON(1,1,1,X%,Y%,J
```

```
BU%,KB%)
-GRAB RUBBERBOX(X%,Y%,1,1,J
W%,H%)
BOX X%,Y%,X%+W%,Y%+H%
LOOP UNTIL BTST(KB%,3)
GRAPHMODE 3
BOX X%,Y%,X%+W%,Y%+H%
```

Program Two takes up less code and works in a different way. Nothing happens until the left hand button on the mouse is held down. The position of the mouse when the button is depressed is taken as the top left position of the rectangle that you want to draw.

Now holding the mouse button down, move the mouse pointer to the position you wish the bottom right hand coordinates to be, when you are satisfied with the position, release the mouse button then the BOX command within the loop draws the required rectangle on the screen. To exit the loop hold down <Alternate> and press the left mouse button. The two remaining commands, GRAPHMODE 3 and BOX overdraw the small box that seems to appear when exiting the loop.

One of the drawbacks of this routine is that from your initial top left coordinates you can only move to the right. With Program One, on the other hand, you can move left as well as right of your first position.

Alert! Alert!

As a newcomer to GFA Basic I have a question which I would really appre-



For the latest game hints, tips and cheats turn to the inimitable Gamebusters on page 54...

chip which causes data loss problems. How can I find out if my STE has one of the faulty DMA chips and where can I get it replaced if it is faulty?

Bob Carpenter, Walsall

stf: First let's get one thing straight – the STEs were not fitted with faulty DMA chips, they were fitted with the same DMA chips which had been successfully used in the STFM and Mega ST since 1985. Unfortunately, these chips were not fully compatible in STEs boasting more than 1MByte of installed RAM using a hard drive.

Call Atari Customer Services on 0753 533344 and ensure you have the serial number of your machine to hand. They can tell from your serial number if the DMA chip needs to be replaced – they do this without even charging you for the privilege.

Little green men



My friend and I are big Gauntlet 2 fans, but when we begin the game, a green elf now appears – unlike before – and

there's nothing we can do about it. I have a 520ST and it has recently been upgraded to a 1040. Please could you help me?

Zoe Muir, Luton, Bedfordshire

stf: It could be because you have a printer hooked up to your ST. If not, we suggest you phone the US Gold helpline on 0902 640027 as they may be able to help.

1MByte gamer



I have a problem with my 520 STE because I cannot play 1MByte games like Streetfighter

2. How much does it cost to upgrade a machine to 1MByte and where can I get the parts from? The other query I have concerns cartridges – what games are available for the ST in cartridge format and where can I get them?

Robert Frost, Felixstowe

stf: You need to get two 256K SIMMs to increase your ST's RAM to 1MByte. These are now cheaper than they were 18 months ago, you can get the two



Before you book your car in for a service ensure any work is carried out by a qualified mechanic.

SIMMs from most computer shops for about £15 – if none of the shops in your area has them, contact Marpet Developments on 0423 712600. There are no games cartridges for your ST and there never have been, the only cartridges commonly seen are used as copy protection dongles with commercial programs. It is unlikely that games are going to be developed in this format.

Flight of the condor



I can't get in touch with Condor Computing who were distributing the Supercharger and SC

Plus PC emulators, do you know of an alternative distributor because I need a Supercharger? Secondly, do you know if the analog ports on my STE can be accessed from within PC emulators so that I can use a PC compatible analog flight stick?

Sam Satia, Huntingdon, Cambs

stf: Condor Computing are no longer trading, and they never actually got round to distributing the Supercharger. We do not know of any other company who imports the emulator. The only way that PC software could access the analog ports is when the code has been written specifically into the software of the PC game itself. PC emulators are rarely used for playing games as they are very slow and can only provide CGA colour graphics. You would be better off getting ST games, although none has taken advantage of the analog ports yet. There is a 21 button analog controller being developed for the Falcon which is also to be compatible with

ciate an answer to. Having seen many applications use information boxes which appear on the screen either asking questions or informing me that I have made a huge mistake, I was wondering if it is possible to make use of this type of box from within a GFA Basic program?

John Tynne, Sheffield

stf: John, these boxes are called ALERT boxes and are very easily programmed from within GFA Basic. All it amounts to

is a one line statement which saves a lot of separate coding. The statement to use is as follows;

```
ALERT a,"Message [goes on]
[in] here","b","OK|YES|I
OOPS",c|
```

The variable a is an integer between zero and three, for the type of box symbol you would like to use;
0 = No symbol
1 = Exclamation mark

2 = Question mark
3 = Stop sign

The rule | character is inserted into the text string to enable you to separate four lines of text with a maximum of 30 characters in each line. Lines longer than the permitted length are truncated at 30 characters.

Variable b is an integer between zero and three which enables you to highlight a button – giving it a bold border. If we say b=1, for instance, then "OK" would be highlighted. This enables you to program a default option which is then selected when you press <Return> or <Enter>.

John, please note that if b=0, then there is no default button and you can only select by pointing and clicking on your mouse.

The variable c| holds the value of the button selected. In the above case, if you use the mouse and click on "OK," c| would hold the value one, this value can then be used to carry out whatever the required instruction is.

Pixel printing

I have a couple of queries. I am writing a program which needs text of some description placed next to a diagram. I have tried the PRINT AT(x,y) statement and have discovered that it is simply not accurate enough as it only prints in columns and rows. So here are my questions:

1. Is there any way of placing text at

a specific pixel point on the screen rather than in columns?

2. If this is possible, can the size of the text be altered to suit the specific application I am in?

Mark Wright, Penrith

stf: There are two methods of printing text at a specific pixel point, one places a character and one places a string.

Character method

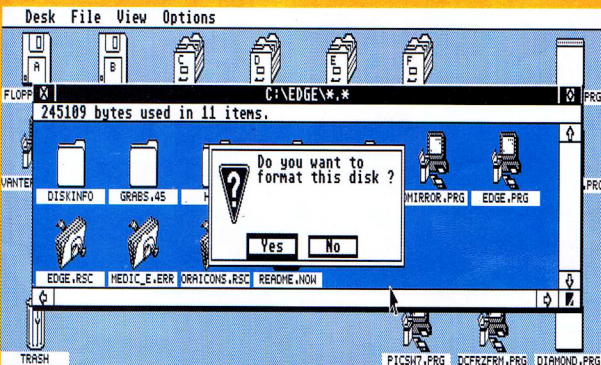
```
ACHAR c,x,y,font,style,angle
c : ASCII character code|
required.
```

```
x & y : Pixel position |
(top right coordinates)
Font : 0=(6*6) Icon Font
1=(8*8) Normal font for colour.
2=(8*16) Normal monochrome|
font.
Style : 0 to 31, bold, |
faint etc.
Angle : 0 or 900 or 1800|
or 2700
```

String method

```
ATEXT x,y,font,String$
x & y : As above.
Font : As above.
String$ : The required text|
to be printed on the screen
```

Another method worth looking into if you require really large text is the TEXT function used in conjunction with the DEFTXT command, both of which are fully explained in the GFA manual.



If you want to create nice little ALERT boxes for your GFA programs take a look at Mac's answer to P Errington's query. It's simply breathtaking.

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by repeated saving and deleting over a period of time? I have the Michtron Hard Turbo Kit which optimises a hard drive by making all the files contiguous and complete. While this worked with my old Seagate 30MByte drive, it does not work properly with my new 52MByte Quantum with an ICD host adaptor – I get an alert saying "Serious Error message – the FAT copies do not match." I'm not sure, but I think that the Michtron program is too old to cope with the newer host adaptors and drives. Do you know if there is an equivalent to PC Tools for my ST?

Chris Barker, Thetford, Norfolk

stf: There is an excellent new program from HiSoft called Diamond Edge

which does exactly what you're looking for. It can optimise, back up, protect against viruses as well as a host of other functions. If you fancy finding out more, see the full review on page 82. You can also contact HiSoft on 0252 718181.

Indiana Jones and the missing data mystery



About three years ago I bought *Indiana Jones: the Graphic Adventure* and what a buy! A truly stonking game. Unfortunately circumstances, however, meant I couldn't back up the disks – as it says to do in the manual. One thing tied to another and, well, Disk Two is fine until you try to enter the catacombs at which point the error

"Data on disk in drive A may be damaged" comes up. After three years, I no longer have proof of purchase other than the original packaging. Do you know how I can get a set of replacement disks?

Jamie Wickinson

stf: Unfortunately, Jamie, the only solution is to buy yourself another copy. US Gold are unlikely to help because your version is so old, but you could still try grovelling by giving them a ring on 021 625 3366.

Spanish ayes



Is there any way of using *Write On* for the Spanish language and with a Spanish ST keyboard? Can ST FORMAT be

translated into Spanish? I understand English but have trouble with some of the technical words that you use in your magazine.

Enric Aloy I Bosch, Espania

stf: *Write On* only exists in English and German and supports Norwegian, Swedish, French and Dutch keyboards. For Spanish, Compo can give you information on how to configure your own key table. To get this you need to register your copy of *Write On* – £7.50 for one year or £15 for life. Write to them at Compo Software, 7 Vinegar Hill, Alconbury Weston, Huntingdon, Cambridgeshire, PE17 5JA, United Kingdom. We're sorry, but we can't translate all the technical bits 'cos we would have to do the same in all other languages.

■ "Do you, Indiana Jones, take this table to be your lawfully-wedded wife?" "I do." "Don't blame you, she's got great legs."



■ How linguistically right on is *Write On*? Well, you can get it in German and English and there is also a range of keyboard settings.



STOS MATTERS

If you keep getting your STOS in a twist, turn to Billy Allan for the solution

Distorted sprites

When I move a sprite across the screen it appears to distort when its Y coordinate crosses 80. What is going wrong?

Shaun Callahan, Stochley

stf: The problem is caused by the sprite being displayed at the same place where the electron gun, which draws your TV picture, is updating the screen. When this happens, the part of your sprite above the gun is still displayed at its old coordinate, while the part below is drawn at the new coordinate.

You can avoid this happening by using the SCREEN SWAP command to swap between the two different screens so that your graphics are only updated when the electron gun is off the top of the screen.

Is it art?

I am writing an art package but I can't get it to overlay shapes on a picture without erasing a block around the shape. Can you help, please?

Ben Riley, Accrington

stf: The solution to your problem is to store the image you want to display as a SCREEN\$ block. This string should give you the general idea.

```
10 key off : hide : curs off : mode 0
20 reserve as screen 14
30 dim BRUSH$(15)
40 logic-back
50 WID=80 : HIG=50
60 ink 5 : bar 0,0 to WID,HIG
70 for X=0 to 15
80 BRUSH$(X)=screen$(logic,0,0,
to WID+16,HIG)
90 screen copy logic,-1,0,WID+15,HIG
```

```
to logic,0,0
100 ink 0 : draw 0,0 to 0,HIG
110 next X
120 for T=1 to 20 : ink rnd(14)+1
130 bar rnd(319),rnd(199) to j
rnd(319),rnd(199)
140 next T
150 screen copy logic to physic
160 screen copy logic to 14
170 repeat
180 screen copy 14 to logic
190 X=x mouse-(WID/2) : Y=y mouse-(HIG/2)
200 screen$(logic,X and $FFF0,Y)=BRUSH$(
(X mod 16)
210 screen swap : wait vbl
220 until mouse key=1
```

Printing problem

I have written a machine code program which prints a message on the screen. When I call it from STOS it appears in the wrong colours and overwrites the screen, ignoring the current cursor position. What is going wrong? Also, can you tell me where to get a cheap list of all the 68000 instructions?

Mike Bernard, Worthing

stf: This occurs because STOS has its own text routine which is completely separate from the TOS routines, so any STOS formatting you do to text will be ignored by the operating system. You can however print a string by calling STOS's own trap routine like this.

```
print: lea mess,a0
moveq #1,d7
trap #3
rts
mess: dc.b "Hello!",0
```

You can find the rest of the trap routines at the back of your STOS manual. If you want a list of the 68000

instruction set then try getting your library to get in Atari ST Internals which is published by Abacus.

Floating into the night

I am writing an accounts package, but STOS seems to get some of the floating point calculations wrong. What is going wrong? Also, I am using PARMT # to save the records to disk but I am having difficulty checking if the disk is running out of space while saving. Can you help?

Frederick Burnett, Preston

stf: To stop STOS rounding floating point numbers incorrectly you should use the FIX command to set the decimal precision. If you add FIX(15) to your program it stops this problem re-occurring. To check for the disk filling up you should use the ON ERROR construct. This little example should give you the basic idea.

```
10 on error goto 1000
20 open out #1,"file.dat"
30 for T=1 to 50000
40 print #1,"HELLO"
50 next T
60 close #1 : end
1000 if err=51 then print "Disk is full!"
1010 boom : resume 60
```

Compatibility

I have read a lot about the new Falcon computer in computer magazines recently. Could you tell me if STOS is compatible with it?

Brian Marker, Bournemouth

stf: We tried STOS on a Falcon and it works fairly well, along with most other software. Remember, though, you have to disable the memory cache to run these programs. STOS has the same problems it used to have on the Mega STE with the mouse corrupting but otherwise it runs perfectly well.



ASSEMBLY POINTERS

Tony Wagstaff answers all those niggling assembly questions

Traps, macros and vectors

I'm using the GFA Assembler, and I keep getting a "symbol redefined" error whenever I attempt to call a macro twice. How can I cure this? Is there any way I can implement the STOS traps #3, #5 and #7 directly in assembly language, without using the STOS environment, and can I install my own routine into the reset vector?

S A Benning, Oxfordshire

stf: The example listing that you supplied looks something like this one:

```
.MACRO reserve \1
move.l #\1,d0
bne .reset
.....
.reset:
.ENDM
```

If you attempt to call the macro more than once, the .reset: label is defined more than once, hence the warning. The program should still assemble, but if you debug it you see that, in the second expansion it branches to .reset: in the first expansion. Not exactly what you want, is it? The way around it is to use the following listing:

```
bne .\-reset1
.....
.\-reset1:
```

The assembler then generates a new label each time the macro is used. See page 93 of the manual for further information.

I'm afraid you can't use the STOS traps unless your program is a STOS program. A trap, of which there are 16, #0 to #15, simply generates an exception, basically it jumps to a routine and executes the instructions there until it hits an rte. Traps #1, #2, #13 and #14 are used by your ST for the BIOS, VDI and so on. You can install your own trap routine by entering its address at \$80 plus the trap number multiplied by four. The STOS

compiler generates the code to install its own traps, you need this to be able to use them.

Both the address of the reset vector, which is at \$0004, and the vector itself, are in ROM – read only memory, so I'm afraid that there isn't much you can do to change them.

Sound advice

I'm very keen to learn how to use the sound facilities of my ST in assembly, particularly samples, but I've not been able to find any information on the subject. Could you point me in the right direction?

Andie Warner, Essex

stf: Samples need to be loaded into the DMA registers, which live in the dizzy heights of memory around \$EEE8900. The sound control register can then be set to play the sample once, or repeat it over and over. The MFP User Timer can be used to load the samples and set the sound control automatically, so that your own program can get on with doing its own thing. The Assembly Pointers in ST FORMAT 41 (see page 58 if you missed it) has more details. There are some books

Operation Stealth



I recently bought a Naksha mouse with the game Operation Stealth, I quickly loaded it up and began playing, but after two hours of trying to get past the first scene in the airport, I gave up. By reading the manual that came with the game, I assume you have to forge yourself a passport using the forger in your briefcase. Please help me crack this game.

Robin Rochford, Leeds

stf: Check out the full solution in STF's 19 and 23. Turn to page 58 to order your copies if you missed them.

Ditto 030?



You have told us that the Falcon030 runs much faster than the ST and can run existing software. Does this mean that the IBM emulator, PC Ditto, runs at an acceptable rate on the Falcon doing away with the need for hardware based emulators? If so, this could be a hidden bonus for those among us who have to use a PC at work and an ST at home.

Mike Williams, Ripon, N Yorks

stf: The Falcon's 68030 runs faster than the average ST, 3.84 MIPS (Millions of Instructions Per Second) at 16MHz as opposed to 1.2 MIPS at 8MHz 68000 on the ST. We have not tested PC Ditto on the Falcon as yet, but it is on our ever-growing list of Falcon tests to be done.

Double vision



The STE has two extra joystick sockets on the left side – a better position than under the case – but standard joystick plugs

don't fit. Do I have to buy an adaptor, or what?

Mr D Green, Huddersfield

stf: There are no analog joysticks available for the ports at the side of the STE as yet, although one is being developed for the Falcon which will be compatible.

Write On part 97



I bought issue 33 of ST FORMAT with Write On on the Cover Disk but I still have not been able to get it to print. A second reading of page 16 says "this version of Write On is fully functioning except that you cannot print..." hence this version, although interesting, is useless as it stands. How can I get the full version?

Mr D L Hill, Billericay, Essex

stf: We think you should read the page in question once again because there were two versions of Write On supplied with issue 33. The version on the second Cover Disk is the full version and includes full printing facilities. The version on the main Cover Disk (with Leander and the raytracing programs) is the demo version and does not include a printing option. This distinction is clearly made within the text of the step-by-step guide. When you read the installation instructions, you are told to select which printer driver you want to install, rather a silly option if it doesn't print. As with all instructions the rule is read them, and then read them again, and again.

STF 1, Manual 0



In the Protect and Survive feature in issue 43 of ST FORMAT you told us never to boot-

up with a disk in the drive, surely my ST manual tells me to do just that. Is my manual wrong or is Clive Parker wrong?

Tom Cuckson, Cleveleys, Lancs

stf: What, Clive wrong? Never. If you look at the article it tells you not to turn on your machine with a disk in the drive, this is different to booting a disk, which can be done by pressing the reset button or pressing <Control> <Alternate> and <Delete> on an STE. When turning on your machine from cold, let the disk light come on once and then go out before inserting the disk into the drive. It is quite safe to reset a machine with the disk in the drive because the power is not interrupted. It is always a good idea to remove a disk from the drive before turning off the power as this can also cause a blank spot on a disk.

STF Ooops: The line in the article Protect and Survive of STF 43 "The same type of problem can occur with hard drives" belongs to the paragraph about magnetic fields and not the paragraph about having floppies in the drive.

Player Manager 2



I love good football games like Kick Off 2 and Italia '90 and I've heard their is to be a new version of Player Manager. However, I can't find anything out about it either in Norway or within the pages of ST FORMAT.

Staale Zachariassen, Norway

stf: Player Manager's programmer, Dino Dini, is currently working on a new footy game for Virgin, provisionally titled Dino Dini's Goal. His next project after that could indeed be the long awaited Player Manager 2. However, it's likely to bear a different

name because Dino is no longer working with Anco, the people who published the original Player Manager game.

You need one of these mate



Being a keen player of flight simulators I am very interested in getting the Airbus A320 game. However, my local computer shop has told me that I need to get a colour monitor to play the game. Apparently, this is because the program updates the screen display too quickly for a standard television to keep up. I thought that the TV Modulator was as capable of displaying both low and medium resolutions as a dedicated monitor, although with slightly less clarity. Is what the shop is claiming correct? I use a 14 inch portable colour TV for playing games.

Mr L J Russell, Ramsgate, Kent

stf: We think that your local shop is trying to con you into buying a colour monitor. Any ST game that can be played on a colour monitor can be played on a colour TV without any problems at all – most modern televisions can even cope with 60Hz input via the SCART socket.

Dungeon Trouble



In Dungeon Master, I am desperately trying to find out how I can get the second key for the Tomb of the Firestaff? It says that it's in the Passage Deep, but I can't find it. Do you have a map for this level? Can you tell me how to get into the tomb?

Colin McKenna, Manchester

stf: We've had so many letters in about Dungeon Master that it's



on the subject, like Musical Applications on the ST, and MIDI and Sound Book for the ST – call Computer Manuals for further information on 021 7066000.

Infected

Regards to the mysterious Cyberpunk for supplying us with some more information on viruses, further to James Loftus' letter of STF 42. The following piece of code should hunt out reset resident programs:-

```
move.l $42E,a0
keep Looking lea -$200(a0),a0
cmp.l #0,a0
beq not_found
cmp.l #$12123456,(a0)
bne keep Looking
cmp.l 4(a0),a0
bne keep Looking
moveq #0,d0
move.w #255,d1
loop add.w (a0)+,d0
dbra d1,loop
cmp.w #5678,d0
```

```
bne keep Looking
found
* a resident program has been found
not_found
* no programs found
```

Knife fix

If you have lavished your money on Devpac 3, if you have version 3.00 or 3.01 you may notice that the status flag indicator towards the bottom left of the register window in MON.68000 version only, doesn't quite behave as it should. The instruction move.w #0,d0, should give T0 Z on the SR line. If it reads T00 V, then you need to fix your program. Fortunately, this is easily remedied using Knife ST, your free on Cover Disk 42 – you know where to turn to if you missed the issue. Yup, that's right, page 59. Once KNIFE.ST.PRG is up and running, move the mouse cursor over to the Read menu and select File.

Making sure you're using a copy of MON.PRG, load it using the file selector. You should now be facing a window full of Hex numbers. Using the slider bar at the bottom of the window, move the white slider about

Cluster	10 of 36	Byte offset	3311 of 3856	8002473 of 8009000
0000:	61 61 72 00 60 60 75 75 75 75 75 75 75 75 75 75	0000	61 61 72 00 60 60 75 75 75 75 75 75 75 75 75 75	0000
0010:	00 74 74 31 00 62 72 70 70 72 72 70 70 66 70 63	0010	00 74 74 31 00 62 72 70 70 72 72 70 70 66 70 63	0010
0020:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0020	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0020
0030:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0030	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0030
0040:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0040	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0040
0050:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0050	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0050
0060:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0060	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0060
0070:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0070	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0070
0080:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0080	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0080
0090:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0090	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	0090
00A0:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00A0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00A0
00B0:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00B0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00B0
00C0:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00C0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00C0
00D0:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00D0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00D0
00E0:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00E0
00F0:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00F0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00F0

■ This is how MON.PRG should look once it's been into surgery, just whip out your Knife ST and carve it into shape.

a quarter of the way along the bar, until the right hand side of the info bar near the top of the window reads \$002400 of \$009000. Open the Commands menu, and select Edit Buffer, and use the cursor keys until the info bar reads \$002473 of \$009000. The characters at the cursor should be DE, change these to 1E. For AMon v3.00, the cursor should be at \$0020B5 and for AMon v3.01 \$0020FF. Finally, select Save Buffer under the Commands menu, and click on OK, and then save.

■ "Mum, you know that harmless mushroom I picked for my collection when we were somewhere near that incredibly empty resort, what was it called? Oh, yeah, Chernobyl? Well, it's grown all green and furry and sings ABBA songs all day long."



impossible to answer everyone's queries individually. The best thing we can suggest is that you buy a Dungeon Master Scrolls hint book from Psygnosis for £5. Interested? Well, in that case, write to them at the following address; Psygnosis, Harrington Building, Liverpool L3 4BQ or call them on 051 709 5755. There are also plenty of map and hint disks available from Public Domain libraries (see page 89 for our PD libraries listing). Does anyone have a complete solution? If you do, you could win yourself £50 by sending it to ST FORMAT.

Legend hints



Can you help me with Legend? I am on Level One of Balenham Sewers, I have a bronze key, but no bronze door. Do I have to use my key elsewhere?

T Yendle, Treforest, Pontypridd

stf: We contacted Mindscape (0444 246333) who were unable to offer much help apart from suggesting that you buy a copy of their Legend hint book, priced at £6.99. Write to Mindscape International, Priority House, Charles Avenue, Burgess Hill, West Sussex, RH15 9PQ and please make your cheques payable to Mindscape International.

Megablaster



Do you know if there is a cheat for Xenon 2: Megablaster?

Paul Wood, Hampshire

stf: Pause the game and type in RUSSIAN AIR. You can now see most of the game's wares. Press <N> during the gameplay if you want to skip a level.

It's all Dutch...



I have two quick questions regarding the Falcon. First of all, can you tell me if a special version of Cubase Audio is going to be released for the Falcon? And secondly, I have many questions about the direct to hard disk recording systems from D2D Systems, can you please supply their address so that I can write to them directly?

D T Music & Management, Rotterdam, Holland

stf: We have had no definite news regarding a Falcon specific version of Cubase Audio. The ST version is due for release at the end of March and it runs on the Falcon, although it does not take advantage of any of the Falcon's features such as the DSP chip. Contact the UK distributors for Cubase, Harman Audio on 0753 576911 for more details. We

have no details of price as yet. D2D Systems can be contacted at ST John's Innovation Centre, Cowley Road, Cambridge, United Kingdom, or you can always try phoning them on 0223 420252.

Impossible upgrade

Is it possible to upgrade existing STE and Mega STE machines to the same specifications as the Falcon030? I am especially interested in the Motorola DSP56001 digital signal processor and the extra screen modes with true colour.

Philip Campbell, Dungay

stf: We're afraid to say that what you want is impossible. The Falcon030 is so different to the ST in design that it is, to all intents and purposes, a different machine, not one piece of hardware on the Falcon motherboard can be transferred to the STE, it would be like trying to upgrade a Spectrum to be ST compatible.

Personal gallery

I have a large amount of clip-art in .IMG format on my hard drive – over 2,000 files in total.

I would be very grateful if you could tell me how I can print them all out into a catalogue, I have not found anything that prints out .IMG files in this way.

Mark Dykes, Nantwich, Cheshire

stf: If you take a look at page 97 of ST FORMAT 43 you see a review of an excellent little utility called Image Cat. This utility enables up to 15 images to be printed on a single sheet of A4 sized paper, each screenshot being reduced to a small image. Apart from .IMG files, Image Cat can print

Degas, Neo, .MGS, icons, .GEM and .PCX pictures as well. There is a special mode called Thumb Cat which prints up to 49 tiny screenshots per page. Image Cat costs £24.99 from Ladbroke Computing International and supports a variety of printers – for more information give them a call on 0772 203166.

Bloody leisure suits



I've seen two articles in my old magazines, but I can't find them now. They were cheats for Blood Money and Leisure Suit Larry 2. Could you let me know which editions of your magazines these articles appeared in?

J Thurley, Godalming, Surrey

stf: The Leisure Suit Larry 2 tips originally appeared in STF 18 and the Blood Money cheat appeared in STF 3 (turn to page 58 if you want to order back issues that you have missed) – quite a while ago – so, here they are again.

Leisure Suit Larry 2: Take the flower from the jungle. Give the flower to the KGB man on the right in front of the airport, but don't get too close. Put your suit back on quickly once you've managed to negotiate the cliffs near the airport. Don't eat the airport food, but search for a bobby pin. Pick the plane's door lock with the bobby pin. Open your parachute while falling. Take the stick found in the first jungle location. When you get near the killer bees, type CRAWL to get under the bush. Use the stick on the snake while he's putting the squeeze on you.

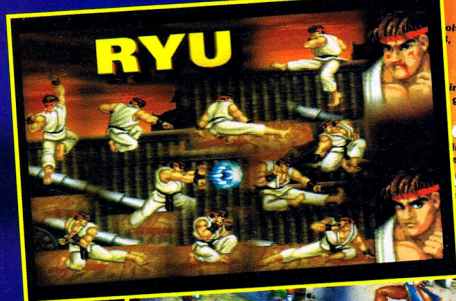
Blood Money: Press the <Help> key for infinite lives. Press <1> on the numeric keypad to get loads of money and <4> to take you to the shop to buy the weapons you want. stf

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"It" is the latest edition of the highly informative and frequently amusing video games organ, GamesMaster, and a more monstrous publication it would be hard to imagine.

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LEMMINGS PSYGNOSIS

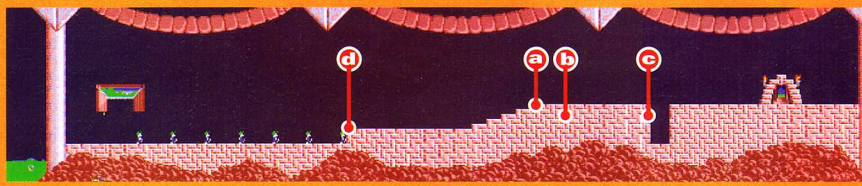
In STF 43 our Art Editor, Steve Fardy, asked how he could complete the Level 19 Tricky Stage of Lemmings. Many thanks to David Stokes of Allerton, Bradford for the solution

1 Turn both the first and ninth lemmings into Climbers – it doesn't have to be the ninth, but it makes timing easier.

2 When the first Climber reaches the top of the stairs turn him into a Digger (A) and, when he has

dug a short distance, change him into a Basher so he bashes just beneath the surface (B).

3 Meanwhile, the second Climber follows the first lemming and starts walking back when he reaches the dead end.



Tints, hips and pollution. No, this isn't the latest Hollywood bodice-ripper, but Rob Mead having problems with his verbs in this month's action-packed roundup of the latest game hints and tips

THE LAST OF VOODOO NIGHTMARE

It's been a long hard slog, but we're finally there. This is the final part of Steve Rennie's solution. Next month we bring you the first part of the complete Ishar, Legend of the Fortress solution

Lion Temple

Exit north, exit west. Go to west corner – of this half of the room – and push the block north-east. Go to the east corner and push the middle block to the south-west twice. Go to the north corner and push the block by the north-east wall to the north-west three places – reopens the exit – and exit north. Exit east. Push the second block – east one – to the south-east and

exit east. Exit south. Kill lion and exit west. Collect gem and then exit north.

Use teleport to cross room, kill lion and collect gems. Teleport back and exit south. Exit east.

Push the block nearest the north-east wall to the north-west and push the other two blocks two places to the north-east. Stand at the edge of the enclosed square – warning: the darker of the snowy tiles are holes. Jump over and collect gem then push the block north-west. Jump out of the enclosed square and exit south. Exit east. Kill lion and exit north. Exit east. Kill rat. Push either of the inner blocks northwards and exit north. Kill rats and exit north.

Collect loose gems until path blocked by red rock. Go back one row and use teleport. Collect last two gems and exit west. Exit north, kill rat and exit south. Push north-west block to the south-west, collect gem and exit west.

Collect both gems. Kill rats – diagonal shooting with machete into square. Go to the north-east row of three blocks and push the south-east one to the south-east. Push the middle block to the south-west and exit south. Exit west.

Collect gem and exit south. Kill rats and exit east. Kill lion and exit west. Exit north,

exit east. Push middle block twice and exit south. Push south-west block twice, go to next row and push north-east block twice then exit south. Kill lion and exit north. Exit east, exit south, exit west, then exit south.

Kill the two rats near the south-west wall. Ignore the gem in the north-east corner. Push the block – by the red rocks and the lion statue – to the south west and collect other gem. Go to corridor near the north-east wall and push the second block on the right side to the south-east. Work your way to the south-east corner and use the teleport then exit west.

Kill rats – shuts east door. Push north-west block in row nearest the west door to the north-east – opens west door. Push the south-east block of the middle row to the south-west – opens south door and exit west.

Push block north-west. Push the three blocks in the middle of the room to the north-east. Kill the lions in the south corner and collect gem. Collect the gems in the west corner and exit west. Jump over the hole and collect gems. Jump back and exit east.

Push block out of the way, push the third block in the central row to the north-east, go to the north corner and blast the rocks. Collect gems and exit north. Kill lions. Push centre block in group three to the south-east twice and exit north. Blast rock and collect



■ Looks like this chappie could do with a touch of serious dentistry.



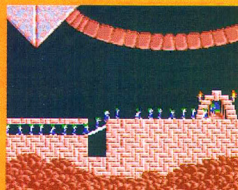
4 Go back to the first Basher lemming, and when he reaches the edge of the trench, turn him into a Builder – he now builds a slope up towards home (C).

5 Now you should turn the second Climber into a Miner when he gets round to reaching the large step – he makes a neat slope so all the other lemmings can proceed (D).

6 By now the first lemming has returned to the start.

7 Just before you finish and admire every single one of the lemmings entering Home,

give both the Climbers umbrellas because they climb the tall wall at the start and you don't want them to fall down with a splat.



■ "Clear off, I'm going home for my tea." "But I thought we were playing follow the leader?"



FIRE AND ICE RENEGADE

Scott Smith of Birmingham reckons the cheat we printed in *STF* 43 didn't go far enough and has sent in his own tip: if you read page seven of the *Fire and Ice* instruction booklet

it tells you to let the puppy in first. If you get the key on Level One, don't go in the door – instead, go up the top across the ice bridge, carry on to the left and, when you come to the edge, wait for a while until another puppy comes along. You now have two lives and some more points.



SABRE TEAM KRISALIS

Cpl M Heaps of BFPO 39 does have an advantage when it comes to combat sims, but deserves £25 for the tips in this SAS romp anyway.

1 Team Selection: choose the four men with the most action points. Movement and rate of fire is more important than strength and accuracy.

2 Weapons: if possible, equip your team with weapons using the same ammunition, then if one man runs out you can transfer spare magazines from another team member. This becomes easier on later missions if you search all the dead bodies and take any weapons you find. Avoid the Accuracy International and the SLR since they require reloading after each shot. The M16A2 and the L7A2 are ideal for Mission One. Assault rifles are best for all the other missions, although sub-machine guns are adequate for Missions Two and Three.

3 First aid kits don't get used up, so take them on missions. They have a cumulative effect, so give both to an injured man to speed up his healing. If you have two injured men, heal them one at a time and shield the weaker one in the centre of your squad. Take the kits to an injured man rather than moving him to them. If he's so severely injured that he has not got enough action points to move the square and pick the kit up, then drop whatever he is carrying. This normally gets you enough points; next turn you can move him back and pick up the things again.

4 Movement: remember you only get one opportunity move per turn, so;

■ Keep your team together for mutual support.

■ It's pointless having two men covering the same area, so increase your movement rate by operating in pairs – one pair covering the front, the other the rear and use a leapfrogging technique – that is, one man covers while another moves.

GBH

gem. Push the north-west block to the south-east. Push the block nearest the south exit to the north-east. Collect gem and then you can exit to the south.

Push the block by the north-west wall out of the way. Push the centre block in the nearest row of three to the north-west twice. Go to the east corner of the room and push the north-west block out of the way and exit east.

Push the single block near the south-east wall twice to the north-west. Stand on the edge of the enclosed square and kill the lion and the rats. Jump over the hole, collect gem, jump back and exit south. Collect gem and exit west. Kill rat, collect gems, blast rocks,

push rock and then exit south. Exit south, exit to the east, push the second south-east block to the south-east, collect gem and exit west. Exit south.

Collect gem, use teleports. Collect gem and exit east. Collect gems. Push the block that's near the north-east wall right out of the way, kill the lion and exit north. Exit east. Kill lions and two rats, then exit north.

Push the south-west block to the north-east and exit west. Collect gem and push block by north-east wall to the north-west and exit north. Exit east, exit south, push south-east block and exit east.

Kill lion. Push south-east block to the south-west. Go two tiles into

the square, do small running jumps to the north-east wall. Go north-west and jump south-west. Jump south-east across the square and take one step south-east to the wall. Jump north-east, collecting gem, and push the block to the north-west.

Jump south-west, then north-west twice and push block south-west to block the entrance. Step and jump to the other teleport, use other teleport. Use furthest north-west teleport, collect gem and teleport back. Use the middle teleport, collect gem and use the other teleport to enter the north corner of the room. Kill the rats – don't fall down the holes – and exit north. Push the north-east

block and then exit south. Follow north-west edge of room and jump over the hole, push the block then exit west. Push the south-east block and exit north. Exit east, exit north, exit east.

Collect the gems and blast the rocks. Kill the lion and work your way up the centre corridor between the red rocks, blasting the rocks. Move onto the first blue square and jump north-east. Turn north-west and kill the rat, continue jumping and collect gems. Exit east.

Push block – don't fall down hole – and exit south.

Go down the north-west wall and push the middle block to the south-east. Go to the gap between

Lion tamers do it with whips



1

■ Lesson 1: Bootsy is one of London Zoo's top animal keepers. Here he demonstrates his "keep out of the bloody way, there's lions loose" technique.



2

■ Lesson 2: When you feel a little braver, you can feed the lions - Bootsy has discovered that they're rather partial to machete.



3

■ Lesson 3: If you still can't make any headway with the lions, you can always decapitate your beasts - they make rather attractive sculptures, don't they?

- c** When you've killed the enemy on an opportunity move, use any remaining action points rather than wasting them.
- d** On Mission Two and Three, close doors behind you and then monitor the Open/Close Door Indicator during your enemy's turn. Effective use of this enables your team to move faster and you don't have to cover your rear as much.
- e** Rather than scrolling the blueprint – which uses action points – select the Fire mode, scroll around the visible area, and then cancel the shot. Practically the



■ One of Madonna's bodyguards in full military kit. Notice the electric cattle prod – this is a self-defence weapon used to keep old cows out of harm's way.

same effect, but no action points are used.

f Distance to the enemy affects the chance of you hitting him and the damage done by a hit, so use the above technique to locate him. It is then often worthwhile moving in closer before firing. A Snapshot when you're adjacent to an enemy is almost guaranteed to hit and kill him. In general, if you see an enemy kill him when it's your turn rather than doing it as an opportunity move. However, on Mission Two and Three, if the enemy is in a different room and a fair distance away, then close the intervening door, let him use up his movement approaching you and shoot him at close range when he opens the door.

5 Before deploying your team, scroll around the game zone. Because of a bug in the program, you can see the starting position of the enemy.

6 Another more serious bug causes it to go haywire if you try to collect hostages on Mission Two, so avoid them at all costs.

7 One other bug that's useful on subsequent missions, is each man starts with a weapon loaded with the same number of rounds that he finished the last mission with, even if he has changed his weapon. This enables you to use weapons for which you've run out of ammunition. It can also produce some funnies like having a G3 assault rifle – 20 round magazine – loaded with 50 rounds if you finished the last mission with a fully loaded L7A2.

8 Save the game: saving the game takes a long time, but do it often. All missions have to be done in order, so save your position just before completing each one – for Missions One, Three and Five it is when you're exiting through the boundary fence, while with Missions Two and Four it is when you are killing the last terrorist – and use a fresh disk for the next mission. You're then able to try out later missions with different combinations of men and equipment without having to go through all the previous missions again.

SNIPPETS

BLACK TIGER

US GOLD

When asked for disk two, insert a blank disk. No enemies are loaded which makes the going a bit easier.

BLUE LIGHTNING

ATARI LYNX

Level codes: 1. AAAA 2. PLAN 3. ALFA 4. BELL 5. NINE 6. LOCK 7. HAND 8. FLEA 9. LIFE.

CHARIOTS OF WRATH

IMPRESSIONS

Press <C> on the numeric keypad for infinite lives.

GAUNTLET 2

US GOLD

If you're having problems on a particular level, pause the game for four minutes, then press <Fire>. All the walls should now change to exits.

THE VERY LAST OF VOODOO NIGHTMARE GBH

the blocks facing to the south-east and jump south-east onto a hidden teleport and use it. Collect the gem. Turn south-east, take one step and jump. Kill the rat. Work your way north-east, use teleport and exit east.

Use teleport (north-east) and blast rock. Jump south-west over hole and blast rock. Use teleport by red rock and push block to the north-west. Jump south-west, take one step south-west and jump north-west. Take a running jump north-east and blast rock.

Take one step north-east and jump north-east. Work your way south-east to the third statue and kill the lion. Go back to the second statue and jump south-west across the room, then turn south-east and jump twice. Jump north-east, then jump south-east twice. Use the teleport, collect the gems, then retrace your steps and exit west.

Collect the gems and exit south. Exit east immediately and kill the rat – if you push more than one block in the last big room and hang around a bit in this room then, when you kill the rat, the north door shuts. By pushing the one block and killing the rat quickly should have the effect of keeping both the north and east doors open. Exit west, exit north, exit east. Blast the rocks along the south-west wall and exit south.

Exit east, collect gems. Kill lions and exit south. Kill lions and

rats. Collect gems and exit south. Kill lion and exit east. Kill rats, blast rocks and collect gems. Exit north.

Go to the north-west wall and push the most north-east block of the L-shape group to the south-east. Go to the south-east wall and push the south-west block of the now two single blocks to the north-east. Go back to the north-west wall and push the second block – of the L-shape – to the north-west. Use teleport and go to the south-east block of the triangle by the middle of the south-west wall and push it north-west. Use the teleport and push the extreme south-west block to the south-west. Go to the south-west wall and push the north-east block of the two by the wall to the south-east and go north-east along the corridor. Collect the blue gems by walking or carefully jumping. Collect the three red gems and exit north.

Kill the two rats. Walk – and jump – across the middle of the room. Kill the lion, collect the gems and exit north.

The Lion God takes one of your hearts, gives you a pin and the "roar of the jungle." Then he revitalises all your hearts.

Jungle

Go north-east and use the teleport square. Work your way north-west and south-west to the clearing with the cluster of huts and cross the bridge onto the witch doctor's

island. The only way to the witch doctor's hut is by going counter-clockwise round the edge of the island, hacking the growth quite a lot and coming to his hut from the north-east. It's not as difficult as it sounds, providing you remember to use the machete as much as possible in the top half of the island and keep close to the edge.

Part Two

You arrive in a pit. Arm yourself with the machete, stand on the square – avoid the holes – and press <Fire>. You appear at the top of the pit which has four levers around the edge plus lots of skeletons coming out of the ground all over the place who try to block your passage. These can be killed with the machete. However, be careful because if you walk into them by the edge of the island you bounce off them, go off the edge and lose a life.

Move all the levers except the south-west one to the right by standing by them. Exit this area in a south-east direction and work your way in the same direction until you almost reach the south-east edge of the island.

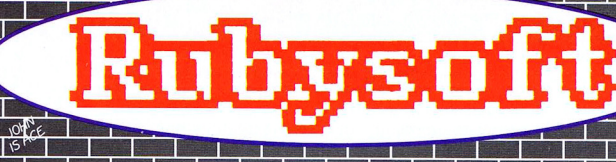
Work your way south-west keeping as near to the edge as possible. Pass two stone heads, then four stone heads with a green blob on the path – this was a green block lowered by the lever. Keep following the edge, passing the red

blob. When you reach the yellow blob go south-west to the other edge of the island and walk south-east along the edge until you reach the stone head.

Turn north-east, go over the bridge and keep going more or less in the same direction. You see two stone heads. Go to the north-west one and go north-west up the path to the right of this head. After three or four bends a zombie rises out of the ground and all the skeletons go down.

Stand opposite the zombie, then go south-west. Turn north-west, then south-west to the edge, then north-west until the zombie has you in his line of sight and will follow you.

Retrace your steps back to the pit and walk around until the zombie falls down it. Drop down into the pit and walk around by the holes until the zombie falls in one of the holes. Repeat the whole process three more times until you have four zombies stuck in the holes. Alternatively, you could spend ages searching for the other three zombies. Stand on the skull and you're transported to the witch doctor. Use the ZZZ potion to slow the witch doctor down and keep firing the machete at him until he dies – the witch doctor changes position after firing a bolt at you. You enter the parked balloon, wave goodbye, rise up and escape the island. And about time, too!



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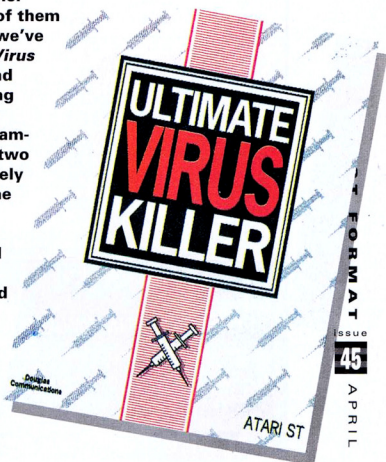
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SCREENPLAY

AND NOW FOR...

Advantage Tennis	page 68
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ROB MEAD

■ Rob's favourite night in involves drinking an alarming amount of herbal tea, and building matchstick pyramids with his window open.



JON PILLAR

■ A good night in as far as Jon's concerned is a contradiction in terms. But if he has to stay in, he usually re-classifies his yoghurt pot collection.



SANDRA VOGEL

■ Sandra knows what fun is all about. She spends her nights in reading the Oxford dictionary and re-arranging the words in an alternative order.

■ "...and this guy came up to me and just literally swept me off my feet. Oh, and he was also a spy. I can't remember his name."
 Guy Spy on page 64.



■ Find out how Doodlebug compares with the Arnold Schwarzeneggers of this world. Page 62.



BUT SERIOUSLY



FRANK CHARLTON

■ Playing football inside his bathroom is Frank's favourite way of spending a night in. Hmm.



PETER CRUSH

■ Peter spends his nights in teaching himself how to cook Japanese food. He hasn't quite grasped its raw qualities yet.



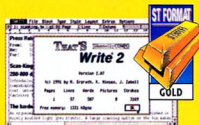
ANDY CURTIS

■ A night in with Andy is an experience... especially when he asks you to play surgeons and patients.

SERIOUS ENOUGH?

Arabesque Professional	Page 76
Circuit Designer v1.1	Page 85
Degasart v2	Page 85
Diamond Edge	Page 82
Fonty	Page 84
Imagecopy Colour	Page 82
That's Write 2	Page 78
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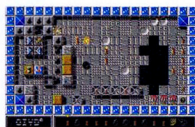
■ If you need a hard drive utility package, you need Diamond Edge. Page 82



■ Compo's latest word processor, **That's Write 2**, is reviewed scoring 90%, and getting a **FORMAT Gold**.

Our definitive "serious" reviews start on page 76

GO PUBLIC!



■ Oxyd is the best PD game to come along in ages. You're that little marble.



■ Get all macho and tough and give those aliens a going over in... **Aliens**.



CHRIS LLOYD

■ There is a very big mystery surrounding Chris's nocturnal activities, and, we're reliably informed to mind our own business.



CLIVE PARKER

■ Clive rarely spends a night away from his local, but when he does, he tends to watch **Star Trek** re-runs.

Turn to page 88 to check out the latest releases into the Public Domain

When people see loads of creepy-crawlies their immediate reaction is

to either scream hysterically or pour boiling water over them. Not this time. Rob Mead

proves he's a big nit by looking at himself underneath a microscope

DON'T DAWDLE... DOODLE

The menu bar at the bottom of the screen shows you your inventory and current status. Read this before you go any further

SCORE: shows your current score.

GOLD: tells you how many gold coins you've collected.

CLOCK: tells you how much time you have left.

BLUE PENCIL: draws an umbrella to slow down a fall.

RED PENCIL: draws a balloon so you can float upwards.

GREEN PENCIL: draws a potion bottle which gives you ten seconds immunity.

YELLOW PENCIL: draws a stopwatch which freezes baddies for ten seconds.

HEALTH: indicates your imminent demise.

LIVES: tells you how many lives you have left.

ERASER BOMB: unleashes a smart bomb which kills off all the baddies in your vicinity.



Mr Clockworks is the first of five end-of-level guardians you encounter on your quest for the Princess Ladybug.



"Don't touch me, Big Nose, or I'll zap you with my rubber." "Too late, Pig's Breath, I popped it with my untamed wit."



Hurrah! The evil slug boss meets an explosive fate and Princess Ladybug is saved.

DOODLEBUG

Have you got a sweet tooth? Well, the long-dead artists who invented the mythical world of Cartoonia did. There was nothing they loved more than drawing pictures of floppy bunny-wunnies, playing with coloured bricks and gambolling in the fields. One day Matron brought round some particularly succulent cream cakes, which the greedy people finished up in one gulp. Unfortunately for them, Matron had laced the goo with poison and they all died a spectacularly grisly death.

Unaware of their masters' fate, the residents of Cartoonia continued their cute existence until, suddenly, the Princess Ladybug disappeared in mysterious circumstances. Reluctantly, her father, the king, sent out a message to his loyal subjects, asking for their help.

In stepped Doodlebug, the Arnold Schwarzenegger of the insect world. "Young man," said the king, "before you embark on your quest I must give you something to help you on your

way." "An Armalite and a few grenades should do the trick," retorted Doodlebug. Instead the king handed over four crappy pencils and a rubber. "I was going to give you the colouring book as well," said the king "but I haven't finished with it yet." With these words ringing in his ears, Doodlebug set off in search of the princess.

Doodlebug follows in the wake of a whole genre of games on your ST – the cutesy platformer. Like *James Pond* and *Parasol Stars* before it, Doodlebug offers you a squeaky clean animated hero, brightly coloured backgrounds and baddies so endearing you want to hug them to death. It's a game for people who never graduated to wearing long trousers. But does it offer anything new? Erm, no.

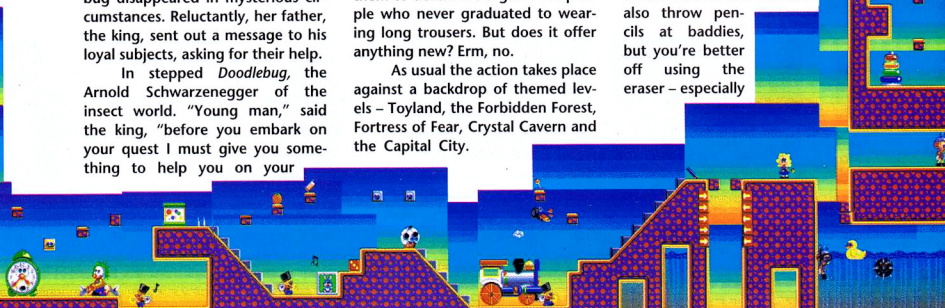
As usual the action takes place against a backdrop of themed levels – Toyland, the Forbidden Forest, Fortress of Fear, Crystal Cavern and the Capital City.

Within each level there are also three sub-levels and a bonus stage where you do battle with an end-of-level guardian. You have to leap around each level against a set time limit, gathering collectibles and defeating various meenies including fire-breathing devils and football-mad snails. Not all the characters you encounter are evil, some offer helpful advice or sell you various modes of transport – cars, spaceships and submarines – which are crucial if you're to finish a level. However, most of the time you're on your own and this is where the magic pencils are handy.

Each pencil has certain properties associated with it – throw the blue one to draw an umbrella, the red one for a balloon and so on. You can also throw pencils at baddies, but you're better off using the eraser – especially



Oops! No parachute. Doodlebug leaps into oblivion on the Fortress of Fear level.





PICK ME UP BEFORE YOU GO-GO

There are plenty of objects for you to pick up as you journey through the levels. Here's a roundup of the most important ones

- HEAD BUTTS:** contain a variety of bonus items.
- GOLD COIN:** adds one gold coin to your inventory.
- MONEY BAG:** adds ten coins to your inventory.
- ERASER:** adds a smart bomb to your inventory.

- PENCIL SHARPENER:** adds one of each pencil to your inventory.
- 1-UP:** gives you an extra life.
- YING YANG:** warps you to another part of a land.
- SKULL:** avoid. It decimates your health level. Not particularly nice.
- FRUIT:** adds points to your score.

- HEART:** boosts your health. You need to pick up five of these for maximum health, indicated by a green heart.
- SWITCHES:** turns various items on or off. These can be good – a warp to the next level, for example – or very nasty.
- PENCIL:** Adds one pencil of a particular colour to your inventory.
- FREEZE TIME:** Stops the game clock temporarily, giving you more time to complete a particular level.



■ How does he do it? Watch in wonder as Doodlebug defies gravity with consummate ease.



■ Be careful here or the man with the specs nicks all your hard-earned money. Blinking tax inspectors.



■ The most effective way of getting rid of baddies is by launching a Sonic-like spin attack.



■ Getting around Capital City is easier when you've got transport. Be sure to keep an eye out for the secondhand spaceship alien.

when dealing with the end-of-level guardians – because it acts as a kind of smart bomb. Another way of disposing of meemies is to use your spin attack. You do this by leaping into the air and pressing the <Fire> button on the joystick. This turns you into an impregnable Sonic-like blur, enabling you to come down hard on your enemies and destroy them.

What's it like?

For something that follows so hackneyed a formula *Doodlebug* is surprisingly good and even more addictive – you can feel the sweat dribbling down your neck when you realise you've only got five seconds left to complete a level.

The first two stages are pretty easy to get through, but by the time you get to the Fortress of Fear or the Crystal Kingdom, things start to get very tricky indeed. Collectibles become rarer and are found in increasingly difficult locations, while the baddies become ever resistant to the plethora of blows you rain upon them. For-

tunately, you're given three lives and two continues, but there's no save game facility or any level codes, so once you've died for the last time you have to start all over again. This can lead to frustration.

The whole game is very reminiscent of *James Pond* with its parallax scrolling and cutesy playgroup sprites – and even the way in which *Doodlebug* gets around the levels in different vehicles. However, the gameplay is so rewarding that you soon stop making comparisons and just play for the hell of it.

As you've probably gathered by now, the whole game is controlled with the joystick. When you're on land, moving the joystick to the left or right moves you left or right. Pulling back on the stick enables you to select a magic pencil while pushing it forward makes Doodlebug jump. When Doodle's in the water or in a vehicle, you lose the ability to select items from your inventory and the joystick acts solely as a mechanism for moving your little chap around.

Moving Doodle around is a piece of cake, there is no jerkiness or delay in your ST's response.

Graphically the game is great, with smooth parallax scrolling and massive end-of-level guardian sprites. Doodle himself is also well-animated, although he does seem to hang on rather precariously to the platforms at times.

The sound effects are the usual burps and beeps, while the music is the usual irritating rubbish. Still, at least you can turn it off when your teeth begin to grate and you start tearing out your hair.

Verdict

Does your ST really need another cutesy platformer? Yes. While *Doodlebug* offers nothing new, it's still great fun to play. It's addictive and packed with playability.

If you're a hardened game-player, however, you may find you can finish it too easily. The concept and execution is hardly original, but even if you already own all of the ST's previous cutesy incarnations, you're going to find this one hard to resist. **STF**

Doodlebug

£25.99
Core Design
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Highs

Cutesy addictive platformer, hugely reminiscent of *James Pond*.

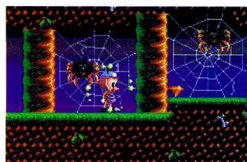
Lows

There are no save game options and it's extremely derivative.

83
ST
FORMAT



■ Not everyone you meet is after your gizzard. This little chap offers helpful advice about goings-on in later levels.



■ "Oll Miss Muffet, come and sit on my tuffet." "Ooh! You cheeky thing."



■ "Hello Eskimo Neil. My it's a bit parky, isn't it? Do you think I could use your igloo?" "Get lost, bug-brain. Bloody tourists, always in the way."

GUY



Can Guy Spy save the world from the carnage of the Doomsday Device?

SPY



Checking your ammo on the run is all in a day's work for a super spy.

Guy Spy's reputation goes before him. He single-handedly wiped out the entire German secret agent underground at the end of World War Two. Now, not long after, he has an even more difficult and dangerous mission – to foil the evil Baron Von Max's plans for world domination.

Max isn't the kind of guy you'd like to invite round for tea, or even be in the same country as. He is a man with only one thing on his mind – gathering crystals. He needs a full set to plug into his lovingly named Doomsday Device, and his fuse is getting very, very short.

The old Baron has found out that the crystals are hidden in various cities around the world, and is scurrying about with the protection of a band of elite troops to gather them. Only one man can save the world from the Baron, and that man is Guy Spy.

Guy Spy follows the Baron's trail to Berlin, but arrives only to find that Von Max and his cronies are about to board a train for Switzerland. So it's off to the railway station to try and foil the Baron. Unfortunately, some of the Baron's troops are laying in wait and Guy Spy starts by rerouting them to heaven – or should that be hell? By the time Guy Spy has dealt with the troops, the Baron has made his escape.

The game takes place over a variety of different locations. Each location has a task of some sort to complete, and all your skills as a super spy are put to the test before the adventure is over. Each level of the game is linked to the next one by a short animation. These sequences help to create continuity between what could otherwise be a disjointed series of set pieces, and also gives an action movie feel to the game.

As it progresses, you get to have shoot-outs, a ski chase, a wander through a maze – keep it short, please, you're supposed to be find-

ing your way out, not taking a picnic to eat at the centre – fight off a not-quite-dead mummy, fend off the bolts of energy unleashed by a god whose 40 winks you have interrupted, have a sword fight, and deal with yet more of Baron Von Nasty Boots' goons in a bar – well, after all, Guy Spy is an American hero so a bar-room brawl is almost a necessity.

The "reward" for successful completion of all these activities is to cross a very dangerous looking rope bridge and enter the Doomsday Tower. A little more fighting – just a couple of super heavyweight heavies and a rather large looking laser canon – before you are faced with the final conflict – a duel with

Oh dear, even the most accomplished super spy gets it wrong sometimes. Looks like the Baron is going to win after all.



Baron Von Max himself. The joystick controls vary according to what level you are on and what task you are performing – for example, wielding a sword, shooting, or moving around a maze.

In some cases, it seems to lack just that little bit of extra responsiveness needed. Although, to be fair, some of the difficulty of joystick control is built-in realism. For example, the recoil from wielding a hefty machine gun would make it rather difficult to keep a steady aim, and this is replicated in the game where it's a fight to keep your aim true.

There is a Save Game option which is only available when you complete a particular task or level. Use it. Rather than plunging you

back into the action, failing on a level can result in a complete restart of the game. While the animations are very good, this can get a little tedious. And, of course, a saved level means faster progress to the defeat of Baron Von Max.

Verdict

Guy Spy doesn't have the best gameplay you're ever likely to have seen in a game of this type, but it does kind of grip you. The animated sequences are quite good, though extended play of the game could leave you wishing that you could skip them. The variety of scenarios and the joystick controls you need to use to complete them keep the interest up, but this is definitely a game where a good read of the manual is necessary if you're going to successfully finish your mission. And if you don't succeed, Baron Von Max does.

Guy Spy

£ 29.99
Readysoft
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Highs

Very useful save game option. Brilliant graphics and animation.

Lows

Not the most responsive joystick control in the world, and the hairline is not always as clear as it could be.

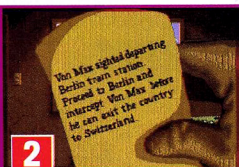


SANDRA VOGEL

Action, man



A pleasant afternoon of birdwatching is rudely interrupted by the arrival of a message from HQ.



Baron Von Max has been located, and Guy Spy has to leave at once – sadly not even for an exotic Hawaiian island.



A few hours later and you parachute into what looks like an unfinished tourist resort ready for action.



Nonchalantly, you buy a ticket, outwardly just like any other tourist. You make your way down to the platform...



...Where you bump into a bunch of old mates who want to kill you. Lovely.

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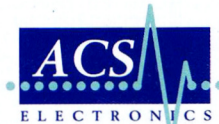
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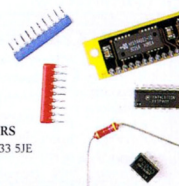
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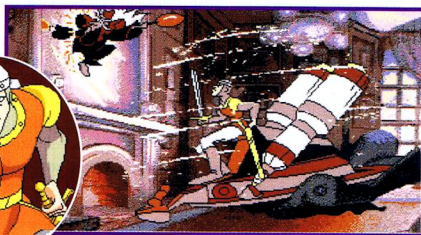


■ Cor! Get a load of that! Look at those angles! Sorry, but they belong to Mordread.

LAIR 3



■ Where's Ali Baba when you need him to let Daphne out of her wand?



■ As Mordread disappears into the magic mirror with Daphne, Dirk tries to remember what happened to the rest of his brain cells.

Daphne has to be the dippiest woman on the planet. She's gone and got herself kidnapped again. Can you believe it? The woman is a victim. She might as well walk around with the words "Kidnap me" tattooed on her forehead. And where was her husband, Dirk the Daring, while all this was going on? He was poncing about in the woods pressing flowers, that's where. Typical.

In *Dragon's Lair 2: Time Warp*, the voluptuous Daphne was whisked away by Mordroc, a man with evil in his heart and getting his nuptials on the brain. Dirk eventually managed to track her down and disposed of Mordroc by inflating him like a balloon and popping him with his sword.

In this latest *Dragon's Lair* installment, *The Curse of Mordread*, Daphne's been abducted by Mordread, Mordroc's sister, who has vowed to get her revenge on the Howard and Hilda of cartoonland. It's now up to you, as Dirk, to get her back.

Dragon's Lair 3 is another cartoon adventure from Readysoft, the company who gave us the *Space Ace* trilogy and *Guy Spy* – see

the review on page 64 of this issue. Previous incarnations of the *Dragon's Lair* saga were characterised by fantastic animated sequences, but were so lacking in gameplay that they hardly seemed like games; all you had to do was watch a brief animated sequence and twitch the joystick or press the <Fire> button to make Dirk react to events in a certain way. Get it wrong and you lose a life, get it right and you move to the next scene.

Instead of offering you something radically different, *Dragon's Lair 3* just offers you more of the same with 27 different animated sequences to plough through. If you get the movement or timing wrong, you end up getting stuck on the same animation and – because the game has a linear structure – you're given no opportunity to try anything else. Before you realise what's happened, you've turned into Rip Van Winkle with both you and your ST covered in cobwebs. It's that dull. At least there's a save game option and with only three lives to play around with, you

really do need it. Another drawback is that the game isn't hard drive installable, so you spend a lot of time waiting around while it accesses one of the seven disks.

The game is controlled by either the joystick or from the keyboard – your ST lets out a little bleep every time you make a move during an animated sequence, so you know you've done something even if the sight of Dirk getting his face chomped off by a bat tells you otherwise. Graphically, the game can't be faulted – the colours are incredible – and the sampled music and effects are pretty good too.

Verdict

Nothing's changed. *Dragon's Lair 3* inherits all the limitations of its predecessors. OK, so it's got great graphics and sound, but the game-

■ Tweedle-Dum and Tweedle-Dee come out of Alice. They've also got a shock in store for Dirk.

play is so lame you might as well go out and hire yourself a Disney sing-along video for the afternoon.

If Readysoft could combine all the wondrous animation with a game you could actually play, they'd have a sure-fire smash on their hands. Unfortunately, however, *Dragon's Lair 3* they don't.

Dragon's Lair 3

£34.99

Readysoft

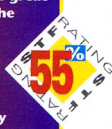
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Highs

Wonderful Disney-style graphics and some great samples making the most of your ST's capabilities.

Lows

Sadly, gameplay is so limited that things can quickly get very tedious.



ROB MEAD

Once upon a time...



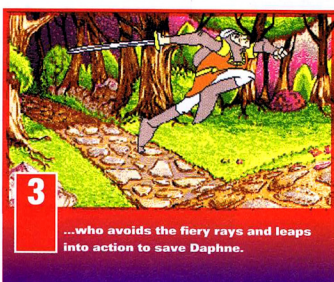
1

Dirk arrives home to find the evil Mordread casting incantations outside.



2

Mordread spots her enemy and fires a bolt of lightning at the hapless Dirk...



3

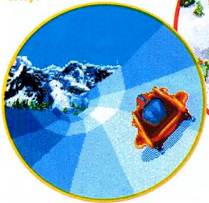
...who avoids the fiery rays and leaps into action to save Daphne.

ACTION SPORT

■ "And here comes our national sports hero Eddie 'the Eagle' Edwards, now on his final attempt. He's picking up the right speed..." "Got that ruddy cameraman out of the way... Argh!"



■ "Oh, no, Gunther!" "What?" "I think I left the oven on in the challet." "Step on it then." "On what?" "Why, why?"



■ "Ethel, pet, pass me my tablets. I think I'm getting a touch of vertigo... Ethel, where are you? Oh, my God! How did you get down there so quickly? Why are you surrounded by so many people? Where am I?"



Not many people enjoy tennis, skiing, motorbike racing and killing people, but that's what's on offer in this compilation from French softies, Microids.

Advantage Tennis

Andre Agassi had better look to his laurels. A hot new tennis superstar is in town and he's going to take on all comers in the competition of the century.

Actually, you start off ranked 100th out of 103 in the world, which still makes you better than Jeremy Bates. It's a tough old world, isn't it?

Advantage Tennis is the old Infogrames' hit and is still one of the best tennis games you can get for your ST. You and another human player are offered a choice of practice, championship or exhibition matches around the world, culminating in a nail-biting final.

Your chap can be controlled with either the joystick or the keyboard and movement around the court is straightforward. Your ST opponents are so good though, that even the most adept tennis player is going

■ Don't get so miserable, you're still three places above Jeremy Bates!

to have problems reaching some of the volleys. The tennis sprites are well animated and move very realistically, although the backgrounds are a bit samey. Sound-wise the game has got some great samples and digitised speech which add to the realism. Overall, Advantage Tennis is a real winner.

Grand Prix 500 2

It's motorbike mania in STF this month, first No Second Prize on the Cover Disk, then Hot Rubber on page 74, and now Grand Prix 500 2.

Sad to say, but Grand Prix 500 2 is actually Hot Rubber in another guise. Apart from the different title screens, the games are exactly the same in every respect. Turn to page 74 for the full review.

Grand Prix 500 2/Hot Rubber is a pretty average bike racing sim and is no match for No Second Prize.

Killerball

2005AD. It's not very far off now, is it? But, by then the world is going to be such a mess that we'll have turned to the violent sport of Killerball to satisfy our bloodthirsty desires. Sounds realistic!

Killerball takes place in a huge circular arena between teams of five men on roller skates. A steel ball is shot out into the arena and each team has to do what-

ever's necessary to score a goal and prevent its opponents from doing the same. The winning team is the one which has scored most goals or has the most surviving members.

You start off in the Minor League, but graduate to the Major League and Elite as you gain experience. Your ultimate aim is to be awarded the coveted Killerball International Cup.

Gameplay is fast and furious as you tear around the track trying to place the ball in the small hidey-hole laughingly called a goal. Not only do you have to contend with your opponents' unwelcome advances, but you can only score a goal when the red goal light is illuminated. If you find the ST opponents too difficult to beat, then up to eight human players can take part instead, with two players facing each other at the same time. Killerball has some neat sprites, but staring at the same portion of the track all the time does your head in after a while. In one-player mode your ST opponents ultimately provide little in the way of excitement and you end up feeling rather uninvolved and uninspired.

The copyright protection is also in French, so get those phrase-books out.

Super Ski 2

Skiing attracts all sorts of people for all sorts of reasons - a favourite has to be sharing a bottle of schnapps with a voluptuous ski instructor in front of an open fire. That and wearing a dayglo kagoule without getting laughed at. With Super Ski 2 you get just six different events - Downhill, Slalom, Giant Slalom, Ski Jumping, Hot Dog and Bobsleigh, with up to four human players taking part in each sport.

Before you start each event, there's given the opportunity to

practise and, boy, do you need it. The control mechanism for each event is different and you need to have quite a few attempts to get to grips with it and actually getting it right before you launch yourself into the full blown Olympic competition stage.

The events themselves are great fun, especially the Bobsleigh and Slalom, with large, well animated sprites and an unusual view of the action - in the Ski Jumping you see your character zoom down the jump towards you. The sound effects are good and the music is funky enough to go down a storm at your local rave.

However, once you've mastered each event, Super Ski 2 is unlikely to provide any long-term interest. Time for that schnapps.

Verdict

Unusually for a compilation, Action Sport actually contains some reasonably good games, especially Advantage Tennis and Super Ski 2, which make the £29.99 retail price worth paying for. There's more than enough quality here to keep the avid sports fan happy, but it's a shame there's no footy sim.

Action Sport

£29.99

Daze/Microids

071 3282762

Highs

At last someone has brought out a compilation worth stumping up £30 for.

Lows

None of the games on Action Sport has a long shelf life.

76
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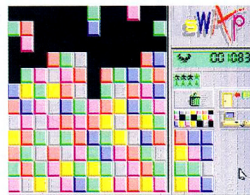
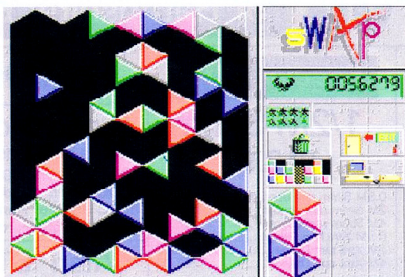
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SWAP

Life is just one big ego trip, with some bits of it making you feel better about yourself than others. Whether or not you believe that, the puzzle game *Swap* is bound to increase your sense of self-worth. It comes packaged with papers which attempt to explain the nature of intelligence, how intelligence was something you demonstrated when you bought *Swap* and how it's something you're going to need when you're playing it. The most important thing to understand about all this is that *Swap* is dead easy. Your ST monitors your progress so that you progress through the levels according to your ability – it's perfectly possible,

■ These triangles are the hardest to cope with – it's difficult to work out what is going to pair off with what other shape.



■ If you're not very careful you tend to get left with these odd squares around the edges. They really mess things up.

therefore, to jump from Level One to Level 40 in about three games, and that can't be bad.

Each level of *Swap* consists of tessellated coloured shapes on a board and it is your job to get rid of all these shapes by pairing up the colours – the pairs then disappear. You achieve this by clicking on a join between two shapes, their

places then swap over – hence the cunning title. Once you have repeated this process as far as you can, you can send an avalanche along to make all the shapes fall to the ground, which may make more pairs, and then finish off the screen by dragging spare tiles from the bank of tiles on the left. Each of these moves has a cost – and the aim is to clear the board with as few swaps, avalanches or extra tiles, and within a time limit – and a points limit on the harder levels.

Verdict

To start with, *Swap* is addictive but does get boring once you've whizzed through as many levels as you can. The time limits are unrealistically long, giving you little challenge, although your speedy efforts

are rewarded with a leap to a higher challenge. Fun for a while, but unlikely to keep you glued to your ST for weeks on end.

Swap

£9.99 Titus
071 700 2119

Highs

Makes you feel brainy because it's so easy and has scores of levels.

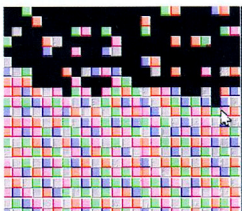
Lows

Little long term interest since all the levels are virtually the same.

ST PLAYING
68%
FANS SAY

PAULA RICHARDS

■ If you thought you had 20:20 vision, try this level – it's bound to ruin it. First you squint, then you go cross-eyed and all the squares turn into the same colour. You should then visit an optician's.

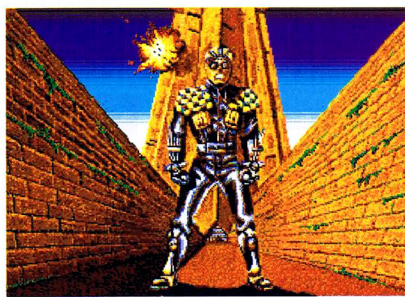


TITAN

Welcome to Vegapolis. A Mecca to hard men in search of a new challenge. Why? Because a new leisure complex has opened in town and it contains a game so deadly the crowds flock to it just to get covered in gore. Sounds good, doesn't it?

If you're expecting a mind-blowing shoot-'em-up or a blood and guts platformer, then prepare to be disappointed. *Titan* is a puzzle game. The object of the game is to ricochet a power sphere against a series of blocks, causing them to

■ This man obviously likes a challenge, so why's he playing *Titan*? Perhaps he's so boring that staying awake is a challenge.



disintegrate. Yup, you guessed it, it's a posh *Breakout* game.

Things aren't quite that simple, however. There are various obstacles which prevent your controller (bat) or your sphere from reaching their objectives. These obstacles range from moving blocks to skulls which kill you immediately as soon as you touch them. On some levels you are helped by the presence of a series of energisers which enable your controller to swap places with the sphere, making movement around the level easier.

The game can be controlled with either the keyboard or the joystick. Scrolling is smooth but, unfortunately, you can only see a small portion of a level on-screen at

any one time. This invariably means that the ball tends to do most of its bouncing off-screen, so you just end up sitting there motionless, your eyes glazed over with the

tedium of it all. The graphics are average for this kind of thing – in fact, they're crap – and all seem to be a particularly yukky shade of brown. The sound is also really horrible, it's like the sort of noise you get from malfunctioning strip lights in dodgy lifts.

Verdict

Titan achieves the rare distinction of making another *Breakout*-style game, *Bunny Bricks*, look absolutely marvellous. Still, at least *Titan* on a budget label, eh?

This is the kind of game to whack on your ST when your kid brother keeps on bugging you 'cos he wants to play something, that's if you're silly enough to buy it in the first place.

Titan

£9.99
Titus
071 700 2119

Highs

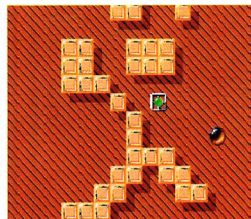
It's a puzzle game, ho ho.

Lows

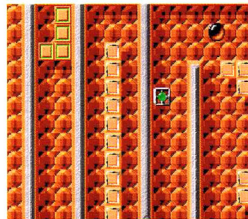
Very boring with a couple of yawns thrown in.

ST PLAYING
23%
FANS SAY

ROB MEAD



■ Ah, nearly finished this level, a few more swipes with the bat, erm, controller, and you can move on to the other 79 levels.



■ This is a tricky bit. You have to manoeuvre the ball between the walls and get the blocks on the other side. Yawn.

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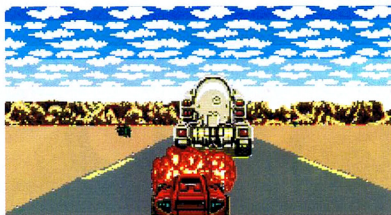
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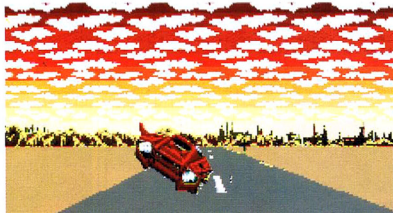


ST FORMAT
45 APRIL

■ Later on, when dealing with overtaking a long vehicle, the instructors would insist you loosed a few high-penetration rounds at it just to show you meant business.



The road scrolls at a stupendous lick — there isn't much scenery, but the overwhelming number of enemy machines that come screaming along the tarmac or whistling out of the sky puts across the pulse-pounding idea of frightening speed incredibly well. And by crafty employment of a Chase HQ-like distance counter, Titus have ensured you have to keep the car at full speed just to



Your machine is kitted out with a couple of handy extras – you have a few homing missiles on board, and at the prod of a key your car takes to the air like Chitty Chitty Bang Bang with a six-millimetre cannon. Don't hesitate before you get *Fire* and *Forget 21*. Faster than a jellyfish on a water slide and with more excitement to the square inch than a packet of Excito, the wonder thrill lozenge, it's an enormously playable, addictive and more than slightly great game. Buy it, put your brain in the drawer and enjoy yourself.

The appeal is likely to wane, but hey! That's a pure arcade game for you.

BY JON PILLAR

A screenshot from the video game Super Mario Bros. Mario is shown in mid-air, jumping over a lava pit. A Piranha Plant is visible in the lava. The background features a mountain range under a blue sky with white clouds. The ground is composed of brick blocks and a row of red flowers.

A cartoon illustration of a cavewoman with a large wooden club, a green dinosaur, a brown bear, and a red dinosaur in a prehistoric setting. The cavewoman is in the center, holding a large wooden club over her shoulder. She has a wide, toothy grin and is wearing a yellow and black patterned loincloth. To her right is a large green dinosaur with a long neck and a small head. In the foreground, a brown bear is looking up at the cavewoman. To the left, a small red dinosaur is also looking up. The background is a dark, rocky landscape with some green grass in the foreground. There are three stars (one white, one yellow, one red) floating in the air.

A screenshot from the Super Mario Bros. game. The scene is a desert-like environment with a large, dark rock formation on the left. A palm tree stands next to it. The ground is composed of grey stone blocks with orange-brown borders. A Goomba enemy is visible on the right side of the screen. The sky is blue with white clouds.

Slack movement, awful controls, no originality, a platform game whose only originality is a large number of platforms.

BY **JON PILLAR**

TRUCK RACING

Trucks, it seems, are fun vehicles capable of a fair turn of speed, despite the overwhelming evidence to the contrary in small villages throughout Britain. It's also a little-known fact that truck-drivers like nothing better than to get together and have a good old race. Cannoning round circuits throughout the world, ramming each other in to the crash barriers, competing for glittering prizes and the chance to be in a dodgily-digitised picture of what appears to be three Formula One drivers taped from Grandstand, these fearless travellers chortle at danger and guffaw

at severe injury. And remember, folks, they are the people responsible for transporting dangerous waste and military supplies through your tower hamlet.

Verdict

Well, it's *Supercars 2*, isn't it, but with trucks, and without the offensive weaponry, or in other words, erm, not *Supercars 2* at all. The fact that you've got a dirty great trailer swinging from side to side behind you makes a surprising difference to the gameplay – gone are the days of slipping cheekily through narrow gaps when you're control-

■ It wasn't all work at the local lorry club. Sometimes the gang would get together and drive side-by-side along a selected trunk road, with hilarious consequences.



■ Dear Anne: Why is truck racing not televised by the BBC? The thrills, spills, accidents and possibility of running down Murray Walker would, we think, make for an entertaining programme. Sincerely, some insane people.



ling an 18-wheeler. Unfortunately, this tends to slow the game down in the sense that charging through the pack tends to lead to more trouble than it's worth. And when you career off the road, getting back on again is a nightmare, especially if you happen to get lodged behind a tree.

The rather neat presentation (there's a very impressive digitised intro), the smooth movement, a stroke of genius in the damage meter and accompanying recuperative pitstops and the utterly mad idea of a truck racing league table all add up to make a good fun game. While it's better with two players, an aggravatingly long vehicle is still no substitute for the blazing mayhem of *Supercars 2*.

Truck Racing

£7.99 Zeppelin Platinum ■ 091 385 7755

Highs

Good idea, six circuits, competent opponents and pitstops to repair the damage.

Lows

Realistically awkward trucks put a stutter on the action. Of novelty value only.



BY JON PILLAR

OFFSHORE WARRIOR



■ Squire Redfern tolerated our high jinks on his boating pond with gruff good humour. After all, he had once been an emotionally unbalanced youth with a high-powered speedboat and too much aggression.

Good morning, students. Today, our lecture on Response and Reaction concerns itself with ST games. Observe how, with the aid of a locked room painted in calming

■ Adjusting her goggles and throwing all her weight behind the turbo thrust lever, Lucy was naturally surprised when her plastic Garfield suddenly exploded again.



blue, an ST and Subject 14, the average gameplayer from Area D, we determine the effects of *Offshore Warrior*.

You can see in your notes it's a powerboat racing game set sometime in the future, and concerns itself with winning races at any cost, up to and including the excitingly violent destruction of your opponents. Professor Tambourine, the lectern is yours. Just remember, the astonishingly inadequate budget is ours, ha ha.

Verdict

With the aid of a hidden microphone, we've managed to record Subject 14's responses to *Offshore Warrior*. (Click.) "Oh yes. Ah. Right-o. Oh dear. Well, time to do that



■ Phyllis enjoyed upsetting fellow boaters with malicious glee. She would often pull up alongside and ask, with a mischievous grin, if they remembered that bit in *Live and Let Die*. She later went on to become something big in the city.

exasperatingly difficult applied maths homework." (Click.) Subject 14's case is not unique.

With scrolling blue bars replacing the usual scrolling grey ones, buoys that totally defy physics and hang around in the centre of the screen for a while before deigning to move towards you, opponents who are immune to everything but side-on ramming while being able to destroy your boat by brushing heavily against the paintwork, and a foolishly limited number of missiles, *Offshore Warrior* is simply dreadfully, dreadfully dreadful. Professor Plimsoll is now going to demonstrate how to convert the game into a relatively satisfying experience with the aid of this dustbin.

Offshore Warrior

£9.99 Titus ■ 071 700 2119

Highs

You're not trying to race, you're trying to survive, see?

Lows

Scrolling blue bars and the worst bits of every bad car racing game you've ever seen.



BY JON PILLAR

THE VOYAGE BEYOND

■ How many you are; no fear, no retreat, no mercy.



Just when you thought it was safe to hang around in the warp zone with a smug grin 'cos you've killed every sentient being, along comes a whole new bunch of slimy things just asking for a plasma bolt in the chops. *The Voyage Beyond* is an extra disk for *Space Crusade* offering ten more missions; ten more opportunities to clump around in unfeasibly bulky armour carrying more unfeasibly large weapons, shouting a lot and shooting things.

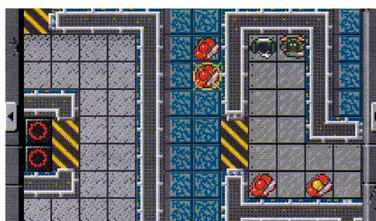
If you haven't played the original *Space Crusade* you need to know it puts you in charge of five space marines, their mission being to enter space ships that have been through the warp zone, and – in

the spirit of something noble, no doubt – kill things. There are three marine chapters with blood-curdling names, so up to three people can take part. Before the off you pick weapons, orders and equipment for your team. It's a classic skirmish wargame, each side takes turns to move and fire. Your ST handles the alien forces and all the dice-rolling; you concentrate on the tactics and looking mean. After each mission you are given a score. Do well and you are promoted and get extra goodies.

The original game featured 12 missions, the *Voyage Beyond* adds ten much more difficult and more imaginative jobs to do. There are three new ranks to achieve which give you marine reinforcements. The flamer replaces the assault cannon in your arsenal and space ogres replace the rather puny gretchins in the alien ranks.

Verdict

Space Crusade fans are likely to feel a slight twinge of disappointment when first loading the *Voyage Beyond*. Sure, there are ten new missions to battle through which



■ No changes in the main screen; all the familiar controls are there with near-identical gameplay. The new missions are a damn sight harder, though. See that chap on the right, that's a space ogre, that is.

should keep even the most skilled player busy for a while. A few new features have appeared like teleport pads, but other than that changes are mostly cosmetic. The space hulk's graphics have changed and there's a new baddie and baddie pacifier. An ideal chance to give the game a complete revamp has been missed. How about a whole new set of aliens and equipment, or some more advanced rules?

Gremlin are releasing the *Voyage Beyond* bundled with the original *Space Crusade* at the same price, making a good game even better. If you already have *Space Crusade* then it depends if you are still hungry for more of the same. Battle hardened space marines will love it.

The Voyage Beyond

£14.99 Gremlin
0742 753423

Highs

Ten more devious missions into the warp zone in classic wargaming style

Lows

Little has actually changed; still has annoying random elements.

STEVE LIVINGSTON
66%

BY CHRIS LLOYD

HOT RUBBER



■ Eddie streaks into the bend and realises, with horror, that the side-car carrying his wife and children has shot into the stand.

Sound's a bit rude, doesn't it? Could this be the kind of film you take trips down to Soho to see? No. It's actually the latest budget motorcycle racing sim from those chaps at Titus.

Hot Rubber places you in control of one of four different motorcycles, each with different specifications with a choice of automatic or manual gears. After you've selected your bike you can choose from 12 race circuits including Le Mans, Silverstone or Hockenheim. There are three racing options including a training run – where you bomb around the track on your own, a single race and a champi-

onship mode. The championship mode enables you to compete against five other ST-controlled opponents, or alternatively a combination of human and ST riders. Once you opt to start a race you can choose to do a qualifying lap which determines your place on the starting grid. Each race consists of four timed laps, so you can get the lap record as well.

Once you start off, hopefully with a half-decent bike, this is where the problems start. The joystick controls appear to be far too sensitive and you end up slewing about all over the track and crashing into barriers. This makes completing a race tricky, even on the simplest circuit. However, after you've practised for about an hour or so, you start to get used to it, and you're soon bombing around



■ "Victory is mine, all mine, har-har har, dribble dribble." "Steady on, Nigel, it's only a bike race, not a seat on the UN Security Council."

■ It's a hard life being a top motorcycle ace. You have to travel all over the world, being put up in top hotels and all for a few minutes glory on a patch of dusty tarmac.



the track like a hyperactive Barry Sheene. Unfortunately, *Hot Rubber* doesn't come with a track editor, so once you've completed all the circuits or won the championship there's not really too much of an incentive to carry on playing – unless the idea of lopping a few thousandths of a second of your lap time appeals to you.

Graphically, *Hot Rubber's* backgrounds are actually pretty boring and the crowd scenes consist of lots of pixels blinking on and off erratically. The bike sprites are reasonably well animated with some good detail, like the back wheel spinning pathetically when you fall off.

Verdict

A reasonable motorcycle sim *Hot Rubber* is spoiled by over-sensitive

joystick controls. The two-player mode is good, but the absence of a track editor means the game lacks long-term appeal.

Hot Rubber

£9.99 Titus
071 700 2119

Highs

Plenty of thrills and spills in this motorcycle racing sim.

Lows

The control mechanism is over-sensitive and there's no track editor.

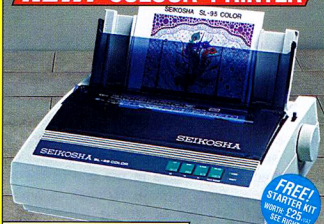
STEVE LIVINGSTON
59%

BY ROB MEAD

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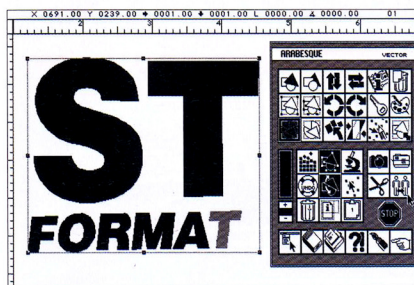
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Arabesque's vector editing menu. It looks like the bitmap menu, and lives contentedly below your mouse button.

DO THE

When it comes to high resolution graphics packages, you might find it difficult choosing between them. If you also need to edit vector graphics, it often means you've got to buy yet another program.

Why not use a package that can do both?

Frank Charlton takes a look at just such a beastie – Arabesque Professional

ARABESQUE PROFESSIONAL 2.15

MACHINE: ST/TT, MONO
MONITOR, 1MBYTE MINIMUM
PRICE: £129

FROM: COMPO SOFTWARE
CONTACT: ☎ 0480 891819

The Big Cheese. King of the Hill. Top Banana. These are just a few of the titles that have been thrown in the direction of the superlative high resolution graphics package, *Megapaint 2 Professional* (£179.00, Cambridge Business Software ☎ 0763 262582). A potential usurper to *Megapaint's* throne has arrived, however, in the shape of *Arabesque Professional* from German developers Shift GmbH, and distributed in the UK by Compo. *Arabesque* is a TT-compatible bitmap and vector graphics editor aimed at the DTP and professional illustration market, but at a price that's accessible to all of us.

You have to install the program to your hard drive or to a blank floppy before you can use it. The single disk contains the program and example images in the normal format, with the fonts compressed to save space. Installation is a breeze thanks to the specially written utility provided. The GEM-driven program is there right through the process, and you can install exactly what you

want, where you want. Options to copy across the sample pictures and fonts are given, and you can specify which printer drivers you want to use, making for a setup tailor-made to your needs. The whole process is as swift and painless as could be, and ranks as one of the most fuss-free efforts STF has ever come across.

The programmers have almost entirely dispensed with the usual GEM interface; they've opted instead for a system of pop-up menus. The main drawing screen is present all the time, so you have the maximum amount of space to work on your image. The menus used are in the shape of an icon toolbox, and you can reach them at any point by clicking with the right mouse button. One click, and up pops the box right below your pointer. The screen adopts a pseudo-GEM look, using a window with horizontal and vertical scroll bars, but that's as far as it goes.

You access all tools and functions either by pop-up menus or keyboard combinations. The manual provides a comprehensive summary of these key commands, and you need it at first – some of the functions are only accessible using the keyboard, such as pressing <Help> to bring up the block effects functions after you've cut out your image block. The problem here is that until you become familiar with the system it can be confusing. Some of the key-presses are "context sensitive," that is, the function they activate depends on what you were doing at the time. Pressing <Help> doesn't always bring up the block menu – only if you've just defined the block you wish to work with.

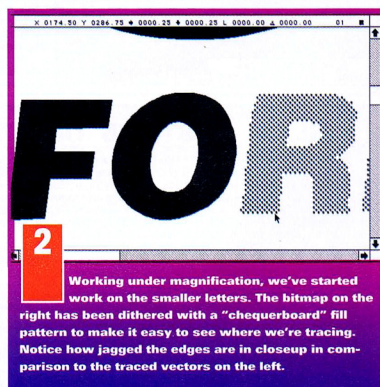
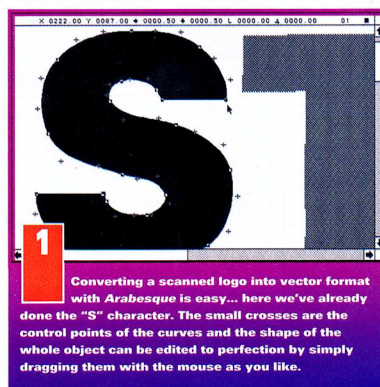
Bitmaps and vectors

Arabesque's great strength lies in its ability to work with both normal bitmap graphics and object-based vector ones. Both formats have their strengths and weaknesses, and depending on what you want to do you're able to use one or the other freely. Bitmaps, for instance, are more capable of storing information like shading or different textures. Unfortunately, once you've drawn your image it can be awkward to change parts of it, and scaling it up or down results in distortion or loss of quality. Vectors, however, are constructed from mathematical descriptions in memory of each shape, or vector object. For example, if you decide you need something behind an object you've already drawn with a vector image, you can just move the new section behind the old one, or, for that matter, behind more than one layer of the image.

Vector drawings are made up from layers, and each layer can be treated as a separate entity when it comes to fiddling with your picture. The downside is that, because of their mathematical nature, you can't use vector images to hold any details such as texture, so it becomes difficult to create "expressive" images. Images like company logos come into their own here though – you can scale and distort your objects without any loss of quality.

The vector and bitmap editors in *Arabesque* are separate animals altogether, and switching between them is as easy as hitting the Spacebar. Something unique to *Arabesque* is the ability to transplant bitmap images into the vector editor, and

Vector graphics made easy



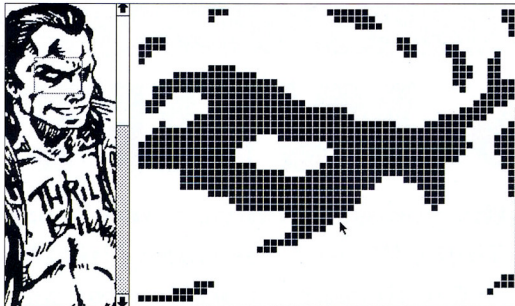
ARABESQUE

vice versa. Moving a bitmap into the vector editor doesn't transform it into a vector automatically, though. It still remains a bit image, and is treated as such, so rescaling it still produces those "jaggies." What you can do here is use it as a template to trace a vector drawing on top of. While dedicated programs exist to produce a traced vector image from a bitmap, such as *Avant Vektor* (£293, System Solutions ☎ 0753 832212), the results often need manual editing to make them accessible. If you have to create your vector by hand, *Arabesque* offers an excellent environment in which to do it.

The vector curves, lines and polygons are simple to use and all can be fine tuned after you've finished them. With a basic picture such as a logo you can have it converted to vector format within half an hour, and tidying it up is hassle free too thanks to the zoom function.

Zooming in

Arabesque enables you to get at all of its tools while working under magnification. Lines, circles, the eraser and even using the cut and paste menus are all a click away, making fine editing of a troublesome bit of screen a doddle. While in the expanded view, the screen splits into two windows – there's an actual size representation on the left and the zoomed image filling about two-thirds of the screen. The pop-up menus are just a click away, and using the magnified screen is as simple as working on the main window. The zoom function is truly impressive – if you spend a lot of time working in closeup, you should take a look at *Arabesque*. The



■ Editing a bitmap picture in the zoom window, with the actual size image on the left. All *Arabesque's* power is available here from the same menu system.

utilities for handling image blocks are also very impressive, with the usual range of tools to stretch, shrink, twist and distort. *Arabesque* also enables you to "clean up" the block. You can smooth out jagged edges from an enlarged picture, and even remove isolated pixels from a block. This is a boon if you have a scanner which often leaves single pixel dots scattered about the image, and can clean up a bad scan into something useable. The only other package we've come across which enables you to do this is *Migraph's Touchup* (£29.95 Gasteiner ☎ 081 365 1151) which isn't a fully featured art package.

Arabesque handles a wide variety of file formats in both modes. Support for IMG, PAC, both compressed and uncompressed *Degas* formats in all three resolutions and monochrome IFF files with a maximum size of 640 by 400 pixels is present in bitmap mode. Vector mode also loads

and saves files in the GEM Metafile format (GDOS isn't needed, however) for use with desktop publishing software, and more impressively, the CVG (Calamus Vector Graphic) standard utilised by *Calamus* (£129.00, Cambridge Business Software ☎ 0763 262582). Files saved as CVG which contain bitmaps do not load into *Calamus*, but the manual warns against this.

Arabesque's printer support is impressive too, with drivers present for both 9 and 24-pin dot matrix, the Atari laser, and the Canon BJ10 inkjet. The drivers are simple text files, and a chapter in the manual documents them thoroughly, so should you own an older or non Epson compatible printer, then creating your own driver should prove painless if you have access to the printer manual. Printouts differ from one mode to the other. When printing bitmaps, you have the option of either a

quick draft printout or a final one, which uses three passes of the print-head. By moving the bitmap into vector mode and printing from there that output quality is much better, since you can select an extra option to use six passes of the head. Printouts are smooth and faultless, but the mode does tend to hungrily eat away at the ribbon! If you own a scanner *Arabesque* comes into its own, since its bitmap editing ability is second to none. For use as a DTP companion it also rates highly – the ability to work with both types of image from within the same program is a real plus, and the support for the CVG standard makes it worthy of consideration if you use *Calamus* regularly. The only problems with *Arabesque* lie with the occasionally fiddly keypresses needed and the fact that it has yet another menu system to learn. If you use your ST for illustration work though, you should take a hard look at *Arabesque*. While lacking in some of *Megapaint Professional's* more advanced features (such as support for the DIN technical drawing standard and the use of symbols for such things as circuit design), it is a much easier package to begin with, and is cheaper too. For the price, it is hard to touch. **stf**

What else compares?

Easy Draw 2 (£39.95, Cambridge Business Software ☎ 0763 262582). Vector package for use with GEM files. Capable and cheap. **Hyperpaint 2** (£29.95, Cambridge Business Software). Basic bitmap editor, but easy to use and good for touching up scanned IMGs. **Megapaint 2** (£85, Cambridge Business Software). Capable bitmap editor without the vector support of its *Professional* brother below. The interface can be intimidating. **Megapaint 2 Professional** (£199, Cambridge Business Software) is the big boy of the graphics world. Almost a CAD package as well, with lots of functions. Worth a look. **Outline Art** (£95, Halco Distribution ☎ 0734 441525) Custom-made for use with *Calamus*, and high powered for working on *Calamus* CVG files, but supports no other formats.

X: 64.49 Y: 212.00 Z: 0.00 L: 0.00 S: 0.00 R: 0.00

3 Here you can see the finished logo, with each separate letter conveniently grouped together into one single frame. This makes it easy to move and manipulate the entire image all at the same time. Now where have you seen that logo before?

4 The final image in all its glory. We've added a shadow effect to it by making another copy of the image with a greyscale tint rather than solid black, then placing it behind the original logo. Save it out as a CVG graphic for *Calamus* and you can have your own competitor to *STF* on the streets in no time!

THE DELIGHTS OF A MULTI-FONTED ENVIRONMENT

If you're into stunning presentation and live for documents with 20 different font changes, then That's Write 2 is most definitely for you

Instead of the conventional ST system font, the screen shows your type in a more

Macintosh-like display. TW2 can be configured to automatically load the particular fonts you require, otherwise it defaults to the 10 cpi Pica. You can also load in any of the other screen fonts as and when you need them. The printer fonts are not loaded from disk until you come to print

out your document. TW2 handles fonts very easily compared to most multi-fonted programs so you don't have to know much to make it work. Best news of all is that TW2 doesn't use GDOS or any of its derivatives – hooray! If you want to, you can even unload a font if you're running short of

TOO WRITE!



After a lengthy genesis, Compo's new word processor, That's Write 2 has finally hit the shops. Peter Crush reports on its pros and cons, and whether you should upgrade

THAT'S WRITE 2
MACHINE: ALL 1MBYTE ST
PRICE: £129
FROM: COMPO SOFTWARE
CONTACT: 0480 891819

How time flies. We reviewed the original version of *That's Write* in STF 22, and gave away its baby brother, *Write On* on

Cover Disk 33. Since then, Compo's programmers have been busy improving their software, and the result is *That's Write 2*.

The update does everything *Write On* does, but has lots of other refinements, like a complementary dictionary facility, footnotes, endnotes, index and contents generation, as well as instruction and macro facilities.

Your money gets you a shrink-wrapped box containing a professional-looking, A5 ring binder with a 300 page manual and three double-sided program disks. To use TW2, your ST needs at least 1MByte of RAM – if working with long documents, you need more. The program runs in medium and high res, so even though a colour monitor or TV is

acceptable, a mono monitor is better. You can scrape by with just one double-sided disk drive but you really need two floppy drives to run the program smoothly. Best of all, run it from a hard disk to give you plenty of room for alternative fonts.

Your first job is to install TW2 for your particular ST setup. The installation procedure involves disk swapping if you have a single floppy system, but it's very easy to do.

If you missed *Write On* from Cover Disk 33 – turn to page 58 to find out how to get your copy – you may not know that Compo's word processing packages make use of multiple fonts. Fonts are usually associated with desktop publishing programs, not word processors –

WHAT'S NEW, THEN?

Here's a run down of the ten main changes found in That's Write 2

- 1 Up to nine documents can be accessed on-screen, and each document has its own enhanced GEM window – this gets round the usual limit of four windows.
- 2 The program's dialog boxes are now moveable on-screen, and they all have keyboard alternatives. There are smart new pop-up menus for certain multiple-option dialog boxes.
- 3 A page preview feature enables a small scale or actual size display of your document to be viewed on-screen, with all the pages of the document side by side within it.
- 4 The automatic correction feature of the spelling checker recognises and corrects typing errors and spelling mistakes as you type.
- 5 The heading level function has been enhanced, and the paragraph settings feature now enables you to define additional spacing before and after each paragraph if that's what you want.
- 6 The blinking of the typing cursor can be turned on or off, and you can choose

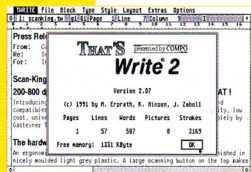
whether or not you use the built-in *That's Write* file selector or the standard selector supplied with your ST.

- 7 Automatic numbering and automatic calculations are now available from the instructions feature in *That's Write*, and the mail merge function has been further improved.

- 8 Support for compressed fonts via the supplied *CFont* Accessory is incorporated into *That's Write 2*, this saves disk storage space and ensures compatibility with the fonts you create in *Fontkit Plus*.

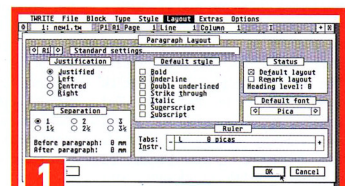
- 9 The *Trech Calculator* Desk Accessory is included in the package, the results of its calculations can be read into your document directly, and the DA can be called up by a keyboard shortcut.

- 10 Plus lots of improvements like: faster formatting (claimed 40 per cent quicker), the addition of on-line help now included within the program and enhanced GEM windows make *That's Write 2* much slicker to use.

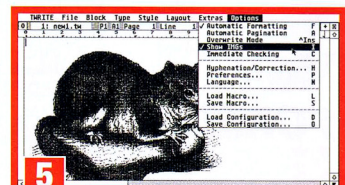


- 11 The extremely helpful screen that tells you all about your document – the number of pages, lines, words and pictures as well as how much memory you have left to fill.

Set up, format, import



- 1 Each paragraph can have a user-defined set of attributes including font, line spacing, left and right margins, left or right justified and hyphenation. Each paragraph format is given a reference number and description, and text can be re-formatted easily.



- 5 IMG pictures can be imported into your TW2 document. These are loaded in at the position of the cursor, and are then displayed on screen. Unlike in *First Word Plus*, the image can be re-sized using the mouse or via a dialog box.



RAM. *That's Write 2* can also use fonts from other sources and a font editor program is supplied with the package which enables you to edit or create fonts.

There is also a utility program called *Font 2* that can convert Public Domain Calamus fonts to *That's Write* or *Write On* format.

When you print your document, you can choose to use your printer's own built-in fonts for fast printing, use the bit-mapped graphic GEM fonts supplied in the program, or a mixture of both. Setting up the printer driver is very easy, since it's done during installation. Drivers for all

major printers are supplied, including Laser printers and HP Deskjets. There's a new printer driver for the HP LaserJet 4 (£4.99 - Compo @ 0480 891819) which enables output at 600 dpi. A PostScript driver to produce output to typesetting machines is under development.

UPGRADES

TW2 has great features that *Write On* doesn't - this makes upgrading worthwhile. Registered users of *Write On* can upgrade to *That's Write* for £79.99. Registered users of v1.5 of *That's Write* can upgrade to TW2 for just £29.99. Compo promise that *That's Write* is an evolving product, with extra features and developments guaranteed to keep it up to date.

early ST word processors, like *First Word*, had no capacity for such sophistication. TW2, however, differs from the norm and you can have up to 20 different fonts in a single document - given enough memory, and enough sense not to use them all standing next to each other.

TW2's extra power is based around the use of a paragraph layout feature, enabling you to set up and save any number of different paragraph styles. Using TW2 is easy once you get the hang of tagging paragraphs - just like in DTP packages.

The program imports *First Word* DOC files perfectly, with no tidying

up required, and also imports ASCII text files. Blocks of text can be selected with the mouse pointer, and are easily cut and then pasted into other text windows. You are offered four different buffers into which text can be cut - this is very useful if you are used to having lots of things happening at the same time.

Scrolling speed for the cursor is faster than *First Word Plus* (£79 from GST Software @ 0480 496666), but not as fast as *Protext* (£152.75 from Arnor @ 0733 68909), and there are plenty of logical keyboard commands for navigating around your document. Formatting text to comply with

the style set in the paragraph layout can be set to automatic or manual.

So what's the verdict?

You may have been quite content up until now with straightforward printer fonts, but try multiple fonts once, and you're hooked. Results are more personal and give a friendly look to your piece of work. Printed output is excellent, and the usual slow printing problems associated with bitmapped word processors do not occur. Fast printing routines mean speedy output - it only took us one and a half minutes to produce a full page of multi-fonted text. Printer support is good, and with further on-going improvement promised, you can't go far wrong!

TW2 is a reasonably priced, easy to use word processor with DTP-like features, and is a very good all-rounder. If ease of use and attractive final presentation of your documents are important, *That's Write 2* is the ideal package for you. **stf**

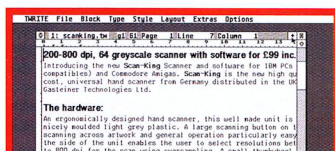
What else?

There are plenty of word processing alternatives for your ST:

1st Word Plus (STF Rating 88% - £79, GST Software, @ 0480 496666) is reliable and solid with no fancy features but a bit old. **Calligrapher (STF Rating 89% - £139, Working Title, @ 0865 883233)** is very powerful but a tad complicated. **Redacteur 3 (STF Rating 90% - £119, The ST Club, @ 0602 410241)** is fast and uses GEM fonts. **Protext 5 (STF Rating 93% - £152.75, Arnor, @ 0733 68909)** is very popular with journalists.

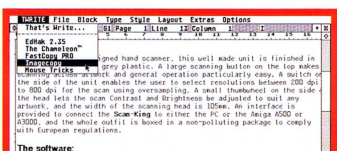


and use graphical fonts



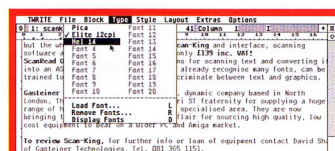
2

That's Write 2 uses a modified GEM interface - the screen windows look like standard GEM windows, but the scroll bars can be made to disappear by clicking on the "x" symbol and they can also be re-sized from any corner.



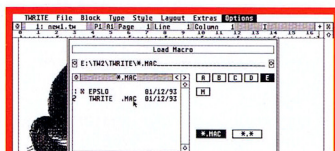
3

Desk Accessories are fully supported, and TW2 is very strong on keyboard shortcuts. Using a new Atari protocol, you can even invoke some DAs by a series of keystrokes, pretty handy as you can write macros to make use of the DAs.



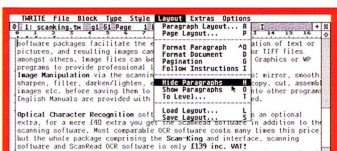
4

Set up a paragraph style with one of the larger font sizes and you can click out all your headings and re-format them into a new size and style. These show on-screen and when you print out - they are ideal for producing price-lists and press releases.



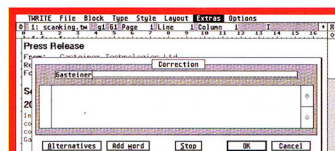
6

The keyboard shortcuts in TW2 enable you to make intelligent use of the macro feature. You are not limited to assigning often used chunks of words, you can also assign complex operations involving menu selection of options.



7

When a paragraph layout is established, you have the option to set a heading level between zero and nine. When you issue a hide paragraph command, the paragraphs with the lowest defined level are not shown on the screen.



8

Check spelling is a feature in *That's Write 2* that's not in *Write On*. There is a good 110,000 word English dictionary on disk, which is automatically loaded into memory. You can insert your own words in supplementary dictionaries which can also be saved.

issue

48

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■ Selecting the Frag Map displays a detailed map of the way that files are split and spread over a hard drive. When files are spread out over a disk it takes much longer to load them into memory because the read/write head has to search back and forth

over the drive to get all the data. Optimizing the disk simply reads the all files into memory and writes them back to disk as single consecutive files.



DIAMOND EDGE

MACHINE: ALL STs WITH HARD DRIVE

PRICE: £49.99

FROM: HISOFT

CONTACT:

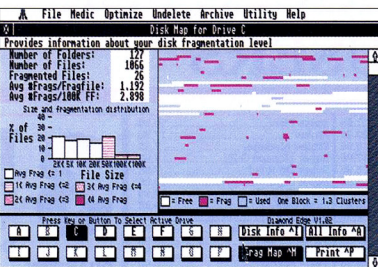
☎ 0525 718181

Hot on the heels of the *Diamond Back 2* hard drive backup utility package (£39.95 HiSoft ☎ 0525 718181 STF Rating: 92%) comes *Diamond Edge*, a hard drive diagnostic, data repair, data recovery and hard drive optimization program.

What does all that mean to you then? Well, if you have a hard drive and you use it on a

regular basis for your work, or you dabble extensively in ST-based music or graphics, then there's always the possibility of data being destroyed or lost – remember Sod's Law? The chances of you having made a recent backup of your drive when your data disappears in a puff of bits and bytes is pretty remote. The ideal solution is to use a program which thoroughly checks your hard drive for those nagging little errors which creep in and may eventually build up and destroy your work.

This is one of the things that *Diamond Edge* can do. It just takes five minutes every day



CLOSE TO

to run the program and perform a diagnostic check on your hard drive partitions. It looks at every file on the partition and validates the information using checksums or CRC (Cyclic Redundancy Check), this guarantees accuracy and detects file corruption. Bad sectors on the disk are mapped and marked as unavailable for use, and the structure of the disk is tested and repaired if necessary. If you do the check daily, there is very little chance that any errors can build up to a dangerous level.

Edge uses the standard GEM interface to access all its functions, the most interesting bit is the Disk Medic menu. This actually analyses the drive partition you wish to check. The partition is scanned for defects

and the result is graphically displayed in the large window on the right of the screen with a text analysis in the window on the left side. You can also select all of the drive partitions and test them consecutively. Any errors are reported and can be usually be repaired by selecting the Fix option, or else you can set the program up to fix errors automatically by enabling the Auto-Fix Errors option in the Medic menu.

Validation of files is a method used to protect against individual files becoming corrupted. *Edge* creates a validation file containing details of all the files on a drive, storing information such as file length, name and time of creation. 32-bit CRC and 16-bit checksum validation methods can

A host of functions

Copies partitions as image files.
Maps bad sectors.
Optimizes drive for faster reading and writing of data.
Partitions hard drives.
Hides partitions.
Reads disk status.
Recovers deleted or damaged files.

Saves, restores and edits disk information.
Tests and repairs disk structure.
Unzeros partitions.
Validates files using CRC and checksums.
Works with floppy or hard drives.
Zeros partitions (wipes them).

COLOUR

IMAGECOPY COLOUR

MACHINE: ALL STs, STes

AND Tts

PRICE: £14.95, OR UPGRADE

FROM IMAGECOPY FOR £4.95

FROM: THE ST CLUB

CONTACT: ☎ 0602 410241

At STF we use something known as a screen grabber to take pictures of the screens. These are little memory-resident programs or Desk Accessories that take a "snap" of the screen's contents and save it to disk as a picture file. A new commercial utility, *Imagecopy*, was reviewed in STF 33, where we gave it a stunning 90%. It

enables you want to grab images from your ST's screen and save them to disk, load and display images from disk to screen, convert images from one file format into another, or print out images to your printer, and all from just one DA slot. This has now been improved to *Imagecopy Colour* which has all this plus new colour capabilities, so now it can print in colour too – the previous version could print out only mono representations of colour pictures via its built-in "dithering" routines.

Like any DA, you have to place *Imagecopy Colour* onto your boot disk, where it can be accessed from the

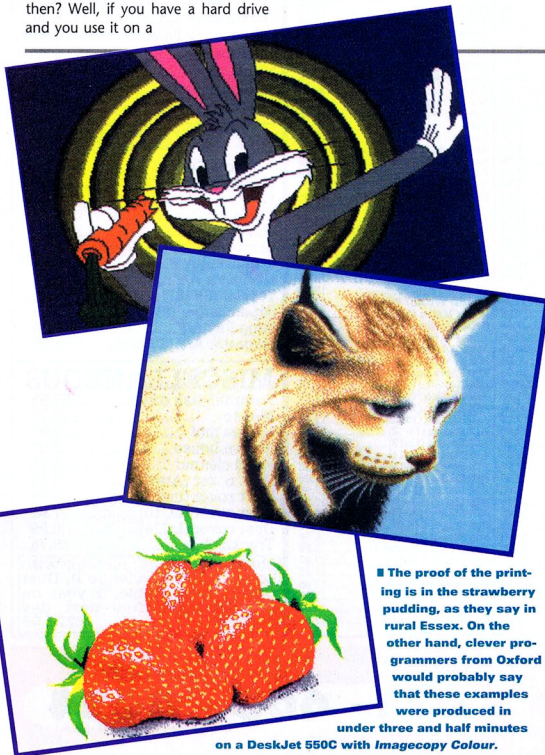
COLOURFUL ADDITIONS

What's the difference between Imagecopy Colour and Imagecopy? Here's a run-down of those important new multi-coloured features

Colour printing on a colour printer is now possible, *Imagecopy Colour* produces full colour output from HP Deskjets 500C and 550C, 9 and 24-pin colour dot matrix printers, and via its Separation feature, colour prints from any other printer so you

can change the black ribbon or cartridge for coloured ones.

The colour separations feature enables multiple printing of the same sheet of paper with different colours one at a time to produce a full colour picture. So mono-only printers like the original DeskJet can produce colour output if you get the colour kits available for them and swap the standard black cartridge for ones with colour inks. Different colour settings for both screen and



■ The proof of the printing is in the strawberry pudding, as they say in rural Essex. On the other hand, clever programmers from Oxford would probably say that these examples were produced in under three and half minutes on a DeskJet 550C with *Imagecopy Colour*.

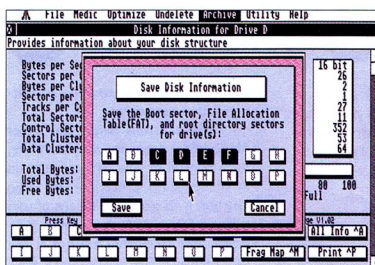
THE EDGE

both be used, while checksum validation is the quicker method of the two, CRC checks are said to be around 100 per cent accurate.

You can also partition a hard drive to split it into several smaller logical drives, making it easier to keep track of different types of data and improve the performance of the drive. The program supports most of the popular hard drive standards including Atari, ICD and Supra. Also included are a number of non-standard partitioning options like the abil-

ity to hide and un-hide partitions and also to save and restore partition information.

Perhaps one of the most useful functions is the Archive Disk Information feature. Instead of having to make a full copy of a partition for backup purposes, you can save the partition information itself. This consists of the File Allocation Tables (FATs), the root directory sector information and the partition boot sector data. These areas contain the information about all the files on the parti-



use the Medic option to ensure that everything is recovered. Remember, any changes made since your last save are not recorded in your archive file.

■ The Archive option enables your partition info to be saved as a file on a floppy drive. This is not intended to be a replacement for a full backup of a partition or hard drive but is just a quick recovery method. If you do recover a partition using this method, it is advisable to

tion; if this data is destroyed then it is impossible to use the programs and files, even though they are not actually damaged. Restoring the drive information enables the data to be recovered. SCSI information can also be saved and restored in the same way, enabling drive information to be recovered that would otherwise have been lost for good.

Diamond Edge is the most advanced hard drive utility program we've laid eyes on that's available for the ST and TT – it really does have an amazing number of options. If you get this program then you have absolutely no excuse for losing data again; if you have a hard drive, you need *Diamond Edge*.

What else is there?

ICD Cleanup ST software (£25.50 Atari Workshop ☎ 0753 832212) STF Rating 79%. Although less expensive and very powerful, Cleanup ST is restricted to hard drive systems with ICD host adaptors and has fewer functions. *Diamond* has the Edge here.

BY CLIVE PARKER

■ This is the all drive information display. The amount of drive space used is displayed as a bar chart and a table of figures giving the drive's byte capacity, used bytes capacity and free bytes capacity. The area at the bottom displays the available drive buttons and selects between the display modes.

File Medic Optimize Undelete Archive Utility Help					
Disk Information for All Drives					
Drive	Usage Information	Total Bytes	Used Bytes	Free Bytes	%Free
A		26,214,824	21,835,872	4,401,152	16.7
B		26,214,824	5,797,888	20,416,936	77.9
C		26,214,824	14,180,800	12,034,024	46.1
D		26,230,976	14,116,912	12,114,064	46.1
E					
F					
G					
H					
Grand Total:		104,962,448	57,545,888	47,416,560	45.2
Press Key on Button to Select Active Drive					
Diamond Edge V1.02					
Disk Info All All Info All					
Frag Map All Print All					

COPIER

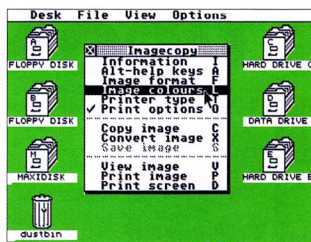
ST's desk menu when you next start up. *Imagecopy Colour* works from inside almost any ST program including non-GEM ones (but not games software), and you just take a grab by pressing <Alternate><Help>.

Just what you want

Imagecopy Colour can grab the whole of your screen, or you can rubber-band just the bit you want. You can finely adjust the size and position of the section of screen you want before it is saved, giving very precise results. The file format for saving onto disk can be any resolution of *Degas* (normal and compressed), or .IMG, but

Imagecopy Colour loads and displays these formats plus Tiny, Neochrome, and Art Director. The program runs in all screen resolutions, and works with any monitor. You can also save an image as a .RSC resource file – that's handy for programmers or for importing icons into *Fontkit* for editing.

If you have a picture in one file format and want to change it into another, *Imagecopy* can do it for you, for example, Tiny to *Degas*, or Neochrome to .IMG. Up to four images can be on-screen at once, and these are displayed in the standard



■ Clicking on Image Colours enables you to establish completely different colour settings for both the screen and the printer images – we reckon that *Imagecopy Colour* reaches the parts other programs cannot.

Other contenders

HPChrome enables you to print scaleable full colour pics and separations from the whole range of HP Deskjets, and *BJChrome* does the same for the Canon Bubblejet. Both cost £5 from Rufus Developments, PO Box 562, Wimborne, Dorset, BH21 2YD, demo versions are available from most PD libraries or you can download it from STF's BBS on 0225 461330. IMPrint (£15.95 from zzSoft, ☎ 0254 672965) enables you to print out *Degas*, *Neo* and *Tiny* pics to colour dot matrix printers only. Reviewed in STF 35, this utility is not quite as smooth an operator or as comprehensive as *Imagecopy Colour*.

BY PETER CRUSH

printer are now possible, enabling you to ensure that printed output on the page matches that which you see on the screen. Printed images often vary from the screen image because of the variations in the colours of the inks and type of paper you are using – this deals with the problem.

You can get new print resolutions with *Imagecopy Colour*, and you can switch between these while you're using the program as well as saving your favourite setting as the

default. Resolution affects the size of the resulting picture, 360 x 360 dpi setting produces a tiny image, but selecting 60 x 60 prints a picture filling a sheet of A4.

New keyboard shortcuts are built into *Imagecopy Colour* in addition to the Main Menu options which could be implemented by single keypresses. For example, all the dialog boxes have shortcuts now: <Control><C> for Cancel, <Control><O> for OK and the like. There are shortcuts for

GEM windows which are all moveable, scrollable and re-sizeable. You can view both colour and mono images on a colour monitor or TV, and if you are using a mono monitor and need to look at a colour picture *Imagecopy Colour* dithers the image and displays it for you in greyscale. Definitely recommended.

Imagecopy Colour's copying commands, as well as for most of its other features.

New pop-up dialog boxes are used in some of the dialog boxes, smart multiple choice mini-menus appear in other of the dialog boxes; *Imagecopy*'s direct print mode now works with the Atari TT and other 68030 machines; and details of suppliers for colour kits are included in the *Imagecopy Colour* manual. All this makes the upgrade very worthwhile.

BOOT ME UP



XBOOT 3

**MACHINE: ALL STs
(PREFERABLY WITH
HARD DISK)**

PRICE: £34.95

FROM: HISOFT

CONTACT:

0525 718181

Xboot is already well established as an outstanding boot-up manager program for the ST. This latest version, however, is of limited use for people who only have floppy disk drives since its real power becomes

apparent when it's used in conjunction with a hard drive.

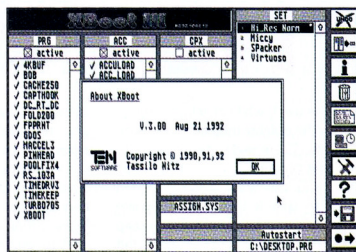
Xboot 3 runs before any other AUTO folder programs and, therefore, takes control of your ST very early on in the boot-up procedure. Its main function is to select, by means of user defined Sets, which Auto folder programs and accessories are run at any one boot-up. The whole Xboot environment is completely mouse driven and there is also a comprehensive set of keyboard shortcuts making any of the functions accessible with only a few keystrokes. Reading the 56-page manual reveals some of the more sophisticated functions of Xboot 3. For example, you can create batch files for each Set which are used to perform repetitive copying or deleting tasks at each boot-up. The execution of programs is also enabled here so that RAMdisks can be installed and files copied to them. The use of the batch commands is limited only by your own inventiveness.

You can associate a Desktop.INF file with each Set. This is handy

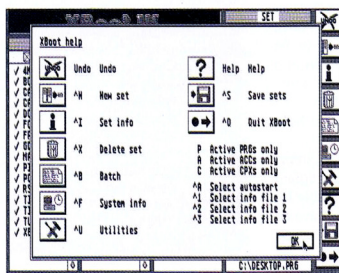
because you may wish your Desktop to be configured differently for each of the resolutions you use.

Xboot finally enables you to execute one other program before it gives up control of your ST. A different program can be selected for each Set. It is advisable here to select a program which cannot be run from the AUTO folder, because you then have the option of using it to launch your most commonly used program. You could even define a different Set to launch each program you work with. With Xboot 3 the possibilities are almost endless.

What makes this such an excellent piece of software is that the whole package, even though quite complex, is simple and intuitive to use. The dialog boxes are refreshingly clear and there is little to get confused about. At £34.95 you might think the program's a bit on the expensive side, but if you take into account the huge amount of extra control you gain you can appreciate that, if you have a hard disk, this program is a must.



■ Xboot 3 displays a lot of info at boot-up, but in a remarkably uncluttered and attractive kind of way.



■ Help is never far away in Xboot 3.

This screen deciphers the main icons for you.

On the other hand

The main competition for Xboot is Superboot 7.4 which we gave away on Cover Disk 36 (you can get it from page 58). It has relatively limited features, but the update, Superboot 8 is now available from PD libraries.

BY ANDY CURTIS

FONTS UPON A TIME

FONTY 1.0

**MACHINE: ALL STs, MEDIUM
AND HIGH RESOLUTION**

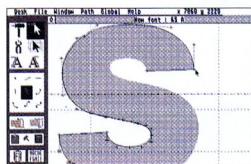
PRICE: £11.95

FROM: THE ST CLUB

CONTACT: 0602 410241

With heavyweight DTP packages such as Calamus SL (£587.50, Halco Distribution 0734 441525) coming in at a relatively high price, you don't often expect to see utilities for them at a low price. The ST Club already produce the best low cost GDOS font editor in Fontkit Plus 4 (£24.95), and now we have a fully fledged vector font editor for just over a tenner.

Unlike GDOS bitmapped fonts in which a separate file has to be created for every font size, Calamus fonts are stored as a mathematical description for each character. This means that the font can be generated in any size from the single file held on disk, and since there is no bitmap image to enlarge, the fonts never lose their quality no matter how much you enlarge them. Of course the disadvantage with yet another font format is that we need yet another font editor to create them. Fonty makes full use of the GEM interface, so working



■ A scanned image being used as a template for tracing a new character.

with the menus and windows is just as it would be from the Desktop.

The presentation is clear, and the program even has an on-line help facility for all of its functions. Fonty has the option to load existing Calamus fonts from disk for you to edit, although it won't handle protected ones such as those supplied with Calamus or by some third party companies. The selection of preset tools on offer for creating an entirely new font is impressive in a program of this price - you aren't just limited to line or Bezier curve functions here; Fonty has five defined curve types, from normal Bezier to S-shaped twists or circular arcs. What this boils down to is that creating a new character from scratch becomes effortless after only

one or two attempts. Using the curve and line functions supplied, you can build up the shape of the character until you're happy with it, then use Fonty's editing mode to fine-tune the position of the points and manually adjust the lines and curves with the mouse. A zoom function enables you to magnify the work window up to a maximum of 4,000% where one pixel literally equals one font co-ordinate, giving an impressively high level of control over editing. Individual characters can be stored in a clipboard and transferred to other character spaces or even other fonts, so you can easily build a library of "primitive" shapes to adapt for similar characters, such as E and F.

Fonty can also load a Degas Elite picture file or an existing GDOS font to use as a background to trace your font over, so conversion of existing fonts or even creating your own from a set of scanned images is possible. The GDOS handling is very handy, and the bitmap image for the character you're editing is automatically placed in the work window in a dithered dot pattern ready for you to trace. One problem we found was when small point sizes are used, the

image is dithered to such a degree that it becomes hard to see, and even harder to trace over. Large sizes - such as 40 point - don't present this problem, however.

Fonty is supplied with a small program which converts a PostScript Type 1 font into a Calamus one. This works well, but often the resultant fonts needs tidying up in Fonty before using them within Calamus. Fonty is a very good buy, and is an excellent introduction to what is often thought of as a bit of a Black Art. If you use Calamus or the new SL version, you'd be mad to miss this. Recommended.

Is there an alternative?

DMC Calamus Font Editor (£35.00, Halco Distribution 0734 441525) - the official offering from DMC, looking a bit long in the tooth now.

BY FRANK CHARLTON



PICTURE POWER

DEGASART V2.0

MACHINE: ALL STs
MEDIUM RES ONLY
PRICE: £10.95
FROM: MARKOTEK
CONTACT: ☎ 0943 600413

Using art packages to compose pictures on your ST requires a whole new set of skills and techniques to be learned before your artistic talent can shine through. With this in mind, Markotek have produced an excellent tutor package designed to familiarise you with the intricacies of ST painting. The author has based his tutorial on *Degas Elite* – which you can get for £19.95 from Cambridge Business Software ☎ 0763 262582. To get the best from *Degasart* you would be well advised to buy a copy of *Degas Elite* since it is referred to constantly.

Degasart comes on two double-sided disks which each contain a separate tutorial program complete with *Degas* illustrations. There is no manual as such supplied although there are two small information sheets which advise you how to make backup copies of the master disks and how to run the programs. Complete and exhaustive on-screen help is available from within *Degasart* itself,

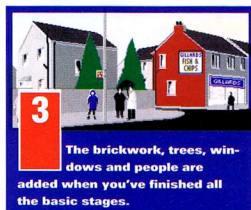
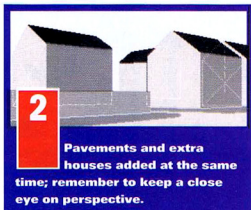
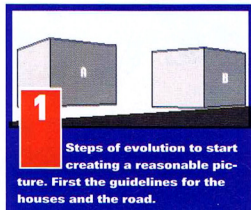
so don't be put off by the lack of manual – you won't get confused.

The interactive user interface is a joy to behold. Click on the up and down arrows to scroll through the text and click on the left and right

arrows to "turn" the pages. If you click on the box marked "picture" you can view the picture which accompanies that page of the tutorial. You can also jump to any page you want. If you want to produce

quality art work on your ST but don't know where to start, *Degasart* is the answer to your prayers. Even if you are an old hand at computer painting you are likely to pick up a few good tips from this package.

Steps to pixel painting



Is that all?

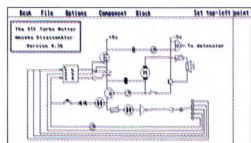
Because of its specialised nature, *Degasart* does not have to negotiate very much competition. However, *Art Tutor* (£1.50 New Age PDL Disk ART.106 ☎ 0702 232826) is a Shareware package aimed at teaching you how to draw cartoon-style pictures on your ST. It does not tie itself to a particular art package. The user interface is less easy to use but there are some helpful tips included. For £1.50 it is worth buying as well as *Degasart* and getting the benefit of both programs.

BY ANDY CURTIS

KICK UP THE ELECTRODES

CIRCUIT DESIGNER V1.1

MACHINE: ALL STs AND TTs,
HIGH RES ONLY
PRICE: £7
FROM: DARREN P GOODWIN
CONTACT: 4 CONISTON DRIVE,
 BOLTON ON DEARNE
 ROTHERAM, SOUTH
 YORKSHIRE. S63 8NE



■ In skilled hands, *Circuit Designer* can create useful circuits. This, however, has been banned by the MoD.

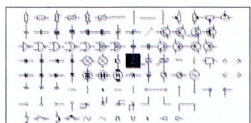
Circuit Designer is an easy-to-use electrical symbol drawing package; you get a double-sided disk containing *Circuit Designer* and a manual which explains all the functions available. To get *Circuit Designer* up and running, first use the set up program supplied. In this you can define the paths needed for the various folders used. This makes installation to your hard drive very simple and quick.

Once inside the program it's all very easy to understand. One click of the right mouse button and up pops the symbols menu. Click on the symbol you want to paint with and you are returned to the main canvas with

the cursor as the symbol you have selected. The program uses an optional snap to grid feature so placement is reliable. If you want to use symbols that are not covered in the symbol menu, there is a simple icon designer where you can quickly draw up the symbol of your choice and immediately use it on the main canvas. Selectable size Integrated Circuit (IC) symbols are also readily available, as are multi-way switches. After a few minutes clicking away you have what looks like a complex electrical circuit. We were reliably informed that our effort would explode violently the moment power was applied, but we

thought it was good fun. Text can be applied in two sizes via a text editor. Title boxes are drawn by rubberbanding. The one bug that we found was in the text editor. The manual indicates that the Function keys place various symbols into the text (Ohms and the like) but we were unable to get this function to work.

This program is ideally suited to the hobbyist or anyone taking courses in electronics at college. The P13 files produced by *Circuit Designer* can be imported into DTP applications or art packages. If you are a serious electronics designer, you are likely to be impressed by what *Circuit Designer* has to offer.



■ Click the right mouse button and up pops the symbols menu. Most things covered here.

And the rest?

It has to be said that at £7 there can be no real competition for *Circuit Designer* on the commercial scene. *Megapaint 2 v4* (£85 Cambridge Business Software ☎ 0763 262582) is really a high res art package but it offers an electronic symbol library which you can use to build up circuit designs. Compared to *Circuit Designer* it is slow and tricky to use. The text facilities are also limited, in *Megapaint* most of the text options come out far too large. *Eplan* (Disk: MISC15 £2 Softville Computer Supplies ☎ 0705 498199) is another high resolution circuit design program from Germany.

BY ANDY CURTIS

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PUBLIC SECTOR

Never, now or at any time in the past, have Chris Lloyd or Clive Parker been involved in dwarf throwing, so please stop sending them in. Thank you for your cooperation

INTERNATIONAL CRICKET 2

BUDGIE - DISK BU 111

International Cricket 2 has a mixture of arcade bits and management bits. There are different teams to choose for you and your ST; each player has individual abilities and there are six different batting strokes and loads of

bowling stuff - including the full toss. After sussing your team out, it's onto the field to put leather to willow. The graphics are rather crude but passable and the sampled effects liven things up. The batting and bowling bring the joystick controls into play - control is a bit on the awkward side at first, but once you get going it plays quite well. It helps a lot if you like cricket.

■ The moment of sheer terror; some bloke takes a run up and chucks a really hard leather ball at your shins. Makes a man out of you though. *International Cricket 2* is a comprehensive version of the game with control over the teams, bowling, fielding and batting.



70% TESTING

GAMES

OXYD GOODMANS PDL - DISK GD 1881



200 levels of very well presented puzzle games. You have to guide a black marble and bump into these oxyd things. To complete each level, you have to pair them up. Sounds a bit dull, but it plays excellently

and there are all sorts of obstacles and puzzles to make you go batty. The good graphics and superb sampled sounds make the whole game ooze quality. You can also play linked games via MIDI or the serial port.

If a mixture of devious puzzles and dexterity tests make you go all warm, this game is bound to make you spontaneously combust. Get it.

■ One of *Oxyd's* more explosive levels. You can pick up and use various objects - on this level it's bombs and dynamite. You are either dead impressed by the realistic and smooth movement of your marble or else it drives you totally barmy. Boink, boink, boink!



92% TESTING

CHAOS LAPD - DISK G 237

A game of up to eight battling wizards, each taking it in turn to cast one spell. There are spells to summon all sorts of creatures to do battle for you. Each wizard can be either ST or human controlled. At the start of each turn you select a spell, then

switch to the board to cast it and control your wizard's and their creation's actions. The graphics are crude but the sampled sound effects are funny - borrowed from *Monty Python*, *Red Dwarf*, *Blackadder* and a host of other sources. It's all keyboard controlled but a mouse option would have been a good idea. Not a bad effort but unlikely to get you over-excited.

■ *Chaos* makes up for some tiny graphics with a big selection of sampled effects. The little chaps create magical spells, then try to kill each other with them. Wizards are like that, you know.

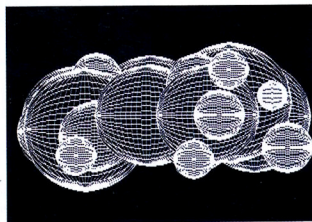


66% TESTING

PROGRAMMING

GFA BASIC 2

ST CLUB - DISK LAN.113



■ This is the GFA run-time only program enabling your programs to be usable without giving away the interpreter with it. This globe demo shows off some of the powerful graphics commands that you can use with GFA Basic.

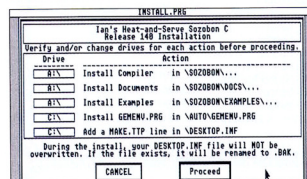
GFA Basic is one of the most popular and commonly used types of BASIC on your ST. GFA Basic 2 is a considerable advance over the first version, the main advantages being its high speed when in interpreter mode and the ease with which it can be compiled into a standalone program.

The full list of programming commands are supplied on this disk in the form of a 50K .DOC file, it is a good idea to print it out if you seriously want to get to grips with the language. Also on the disk is a special run-time version of the interpreter to enable you to run your own programs and there's also a couple of folders crammed with demo programs.

85% TESTING

HEAT-AND-SERVE C - MODIFIED SOZOBON C

GOODMANS INTERNATIONAL - DISK GD1513



■ The installation program supplied with HSC really makes the task of installing the modified version of *Sozobon C* a breeze, especially if you are installing to hard drive. Simply enter the relevant path names and the software does the rest.

Sozobon C is the most widely used PD or Shareware version of C around, but it is a little idiosyncratic in structure when compared to commercial versions of C. A clever chap by the name of Ian Lepore has taken it upon himself to produce a modified version of the language making it easier to use, easier to understand and much closer to other versions of C.

An installation program is provided so that you can practically set up and go immediately. If you have a single floppy you can install the system onto three disks without any problems as long as you have at least 1MByte of RAM in your ST. An easy to use C compiler.

74% TESTING



ALIENS

LAPD -
DISK G 262

Seen the film? Remember the first fight between the marines and the aliens? Well, this game is a skirmish wargame based on that bit. There are loads of samples taken from the film as well as digitised pictures. The effects help to add sparkle to a simple

game; move, aim and shout "eat this." The marine weapons all have different statistics and each side takes it in turn to move. All you have to do is make it across the screen without getting all your chaps pounced on and eaten. Aliens keep coming out of the walls, man, and it's not easy. Good clean wargaming fun in a sort of waste-the-alien-scum-type way.

■ The exit doesn't look far away does it? *Aliens* is a skirmish wargame unashamedly based on the film. The punch-up is every bit as dangerous but this time there's no Ridley to save the day. *Space Crusade* on the cheap and without the silly boots.



ROCKFALL

GOODMANS PDL -
DISK GD 1879

Yet another version of *Boulderdash* – the most copied game in history ever, probably. The idea is to collect millions of diamonds while avoiding being squashed by boulders. It's a very simple idea, but the completely devious puzzles on each

level make it a really good game. This version is polished and the levels start off pretty tricky and get even trickier.

If you've never played a *Boulderdash* clone, then this is one of the best ones you can get your hands on. If you collect different versions, you probably need to get out and socialise a bit more – try joining a few evening classes or something.

■ First conceived in the late fifth century by an anchorite called Gladii, *Boulderdash* has spawned many imitators. *Rockfall* is but one and a jolly good one too. Prepare yourself for frustration city.



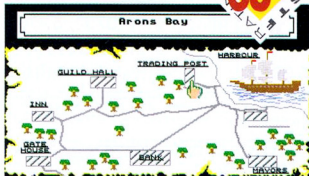
CURSE OF AZRIEL

LAPD -
DISK L 31

A classic middle earth story leads you into this graphical adventure. You start as the captain of a small merchant ship in search for the seven swords of Azriel, some weird god bloke. You can trade in goods, visit inns and do a few other adventurer-

type things, like visit the bank. The graphics are fairly crude and there is a sprinkling of samples. The use of the STOS appear command slows things down and it soon grates. Eventually, it turns into a sort of fantasy adventure management game as you trade, build up your resources and look for clues to find the swords – you need lots of patience to get into this game.

■ The throbbing bustle that is the town of Arons Bay. What do you do first? How about popping down to the inn to hang about listening to people's conversations and hoping you don't get beaten up. That sounds like proper real adventurer's behaviour.



WORLD FIGHTING CHAMPIONSHIP

LAPD -
DISK G 261

There aren't many beat-'em-ups in the PD for a simple reason; it isn't easy to write a good one. *World Fighting Championship* is a brave attempt. It's got one or two player modes and you get a choice of characters for the

foot-in-the-face treatment. The sprites themselves are quite small and simplistic. Each fighter has four attacking moves, a special move and a block or two. The main problem is blocking – no matter how fast you are, it's very difficult to react in time, so you tend not to both and concentrate on exchanging kicks and punches. Fun for a quick session, but frustrating after a while.

■ The two finely trained fighters first bow gracefully, then approach each other with the express purpose of scoring an honourable victory using brute force and lots of hitting when the ref's not looking.



TURBO ASSEMBLER

ST CLUB -
DISK LAN.122

Turbo Assembler is a Shareware assembly language package which is supplied with a small library of machine code routines. This enables you to get to grips with the various GEM, AES and VDI functions of your ST.

The editor has an excellent GEM interface making it easier to use than some PD and Shareware assemblers – and even some commercial ones! One irritating feature is that the alert messages and the status line messages are in German. The de-bugger is very similar in looks and operation to the *GFA Basic* interface. It's very comprehensive, with 20 on-screen commands available just a mouse click away. Mysteriously, the de-bugger is called *Bugaboo*. This suite of programs is well suited as an introduction to assembler. You can get a full manual from the author when you register.

X PROLOG 2.0 AND OTHERS

FLOPPYSHOP -
DISK LAN.15

This disk contains five different types of programming utilities, consisting of a simple assembler, *X Prolog*, an assembler for programming 20-pin and 24-pin PAL chips, a set of C libraries for GEM, fast AES and VDI bindings and a detailed technical document describing how the blitter chip can be directly accessed via programming languages. All pretty heavy stuff designed to be used in conjunction with your own programming setup.

The *X Prolog* interpreter is supplied with a hefty 26K .DOC file which contains details of all the *Prolog* commands and their syntax as well as details of the interpreter's editing commands. The documentation does not pretend to be a guide to the language, although a couple of examples are included on the disk. Useful if you are a serious programmer.

MODULA-2/68

ST CLUB -
DISK LAN.43

The software on this disk consists of a complete *Modula 2* language system for 68000 processor based machines, with a compiler, linker, library modules and full documentation for each section. *Modula 2* is designed for building complex software systems and combines Pascal-like high level language commands with direct low-level hardware calls – this gives an extraordinarily high degree of control over hardware systems. The language is a standard compiler for Unix systems and workstations, and can also be used as a cross-development system to write applications for other 68000 based machines. A version of the powerful *Emacs* text editor is supplied on the disk for editing purposes, it is worth getting this disk for *Emacs* alone. If you are a serious programmer or are about to become one, get it. If not, don't.

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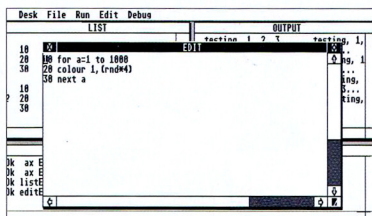
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ST Basic is not the ideal programming environment for your ST, it's slow, buggy and the editor is a pain to use.
Still, at least it's a bargain and is quite easy to get to grips with once you have a manual.

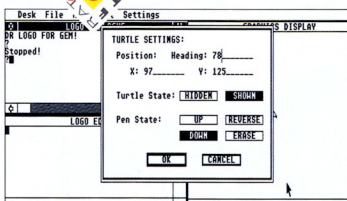
ST BASIC AND ST LOGO

ST CLUB - DISK LAN.31

This disk contains the originally released versions of *ST Basic* and *ST Logo*, along with an updated version of the BASIC language. Unfortunately, there are no *ST Basic* demo programs, just a .DOC file with the complete list of commands but with no mention of usage or syntax. To use *ST Basic*, you have to try and get hold of an old ST manual. The *Logo* program was also the

one provided by Atari back in 1985 and is awkward. On TOS 2.06, it grabbed all available memory and would not load any of the demo programs supplied. On earlier operating systems it ran OK and the demos were helpful.

Abacus published a couple of *ST Basic* books and a guide to *Logo* that are useful, *Tricks and Tips*, the *Basic Training Guide* and the *Logo User's Guide*. Another good *ST Basic* book is *Programming by Example* from Kuma - reviewed on page 16. These books are available from Computer Manuals, call them on 021 706 6000.



ST Logo is not really any easier to use than ST Basic, it's just as slow and a nuisance to set up and get running.
That's funny, we thought Pen State was a US University, not a Logo setting. Get a book on Logo, it should be useful!

XScheme

ST CLUB - DISK LAN.99

This is an ST version of a little known language called Scheme. *XScheme* is geared to Object Oriented Programming (OOP). There are no details in the large 54K document file on what you can do with the language, or the purpose of OOP programming. OOP is used on large mainframe systems and is dedicated to streamlining the system software so that one large OOP application can do the work of many small

applications. The .DOC file contains a complete list of all the *XScheme* language commands along with verbose descriptions of usage and syntax - also included are the titles of recommended books on Scheme and Lisp programming. Running the editor program provides you with the software version number and a flashing cursor on-screen, not very helpful. This software is very useful if you're interested in getting into OOP mainly because of its vast documentation file. If you've never heard of Scheme, *XScheme* or OOP, then it's of little use.

C-LISP

PAGE 6 - DISK ST 710

C-Lisp is an implementation of Common Lisp for your ST, a programming language developed way back in 1959. In those days, computers were usually programmed by punching holes in cards passing instructions in binary format directly to the computer and tape based magnetic media was still under development. The .DOC file on the disk is

pretty terse about getting going and recommends that you buy three books totalling some 1,600 pages to learn Lisp programming.

No demo files are provided with the language and the editing environment is pretty basic. There is no list of programming commands, although there is a useful on-line help facility if you get stuck. Allegedly used for symbolic knowledge processing, or AI (Artificial Intelligence) systems, *C-Lisp* seems like symbols to us.

THE FORMAT PD DIRECTORY

Where to go for Public Domain software - demos, games and utilities for around £3 a disk! If you write to any of these libraries for a catalogue, enclosed an SAE. Budget games are available from all PD libraries indicated by a (B). Simply mention the disk number (above the review) when you order the disk.

SOUTH OF ENGLAND

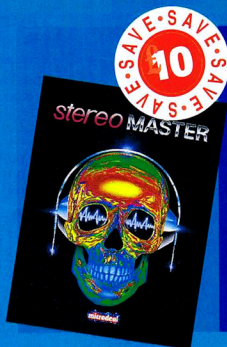
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Double-take twins: "I wish ST FORMAT



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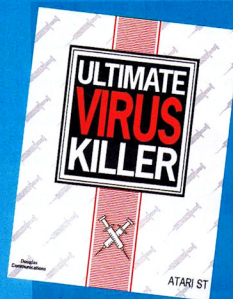
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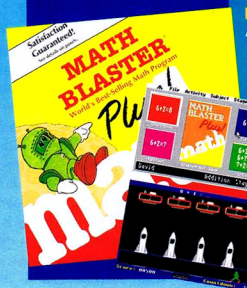
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MANDARIN SOFTWARE
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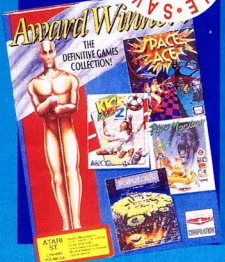
had a mail order section." "Oh they have - look!"



MUSIC IN SEQUENCE

MUSIC SALES
This easy-to-follow book guides you through the whole what can be rather daunting process of writing songs on a sequencer.

DESCRIPTION: Music in Sequence
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WE DON'T NEED

Music lessons at school don't have to be totally boring - for a start you could do a project on how Amadeus Mozart contracted his social diseases. Failing that, Kevin Pawsey shows you how using your ST can give you a totally fresh approach

Hands up who enjoyed music when they were at school? Thought so. Music has always been stuck in a rut of tradition and old-fashioned teaching methods. It doesn't have to be like that, you know. With your ST, you have the chance to go boldly where no musician or music teacher has ever gone before. Music technology enables every teacher, pupil and *ST FORMAT* reader - from whatever musical background - to become a composer, performer and listener. This is exactly what the National Curriculum requires and you really don't need to be a budding Beethoven to achieve results!

Music technology has really flourished since the development of MIDI (Musical Instrument Digital Interface) ten years ago. MIDI is the standard set by instrument manufacturers which enables electronic instruments - samplers, drum machines and synthesizers - to communicate with each other. Linking these instruments via MIDI and controlling them with your ST gives you access to an extremely powerful music production tool.

Because of its built-in MIDI interface, the ST is the computer for producing music. As its sound chip is as useful as a condom machine in the Vatican, though, you also need some other MIDI hardware (see "What about the hardware?" on opposite page). When it comes to sequencing, no other computer comes close to your ST, and there are over 50 sequencing packages available - some have sophisticated scorewriting and editing facilities while others enable you to record and playback with little in the way to

LIGHTS, MUSIC, ACTION

If you want your drama production to come alive how about using sound creativity to reinforce an image or a spoken word

The ST setup that you use for composing, performing and listening is exactly what you need for generating music and sound effects for a drama production. The most important aspect of creating music for drama is that the music is dictated by the play, and not the other way around - when the hero dies you don't want a huge brass fanfare, why

not choose an ethereal texture from your keyboard playing in a minor key? Sob, sob, sob!

If you were involved with a musical, using a couple of MIDI keyboards and a few real musicians can create the sound of a full orchestra while having total control and access to otherwise unobtainable sounds. You could go the whole hog and cue the entire production using your ST's sequencer. This may take time to perfect, but the results are stunning. As a final touch you could illuminate the stage using MIDI controlled lights and your ST.

manipulate MIDI data. To get a clearer picture, go and hassle the assistants in your local music shop and ask them for a demo of the programs that you're interested in. When choosing, remember that some MIDI software packages are hideously expensive.

A sequencer enables you to record and manipulate MIDI information and works in a similar way to a tape recorder. You can record a piano part from a MIDI keyboard into a sequencer, for instance, and play it back. You can then take that same part and copy it onto another track with a string sound, add a bass part on another track and a drum part on another - you can then put the whole piece of music together in perfect time. So, you have an entire orchestra at your finger tips and are only limited by the available sounds and your imagination.

Two of the sequencing packages - *Cubase* and *Notator* - also enable you to arrange and print scores. Whether it's a pupil's com-

position or an arrangement for the school orchestra, all you have to do is play the music on your MIDI keyboard and, hey presto, it is translated into full blown notation. Now, that's easy.

You can also use your ST at school for monitoring performance and technique. Using a MIDI equipped instrument it is possible to record a performance in real time for analysis at a later date. The teacher sets an exercise for a piano student, for example, who records his or her practice into the sequencer enabling the teacher to analyse the performance without the student being present.

If you're a music teacher or an inexperienced musician, there is one other package you should look at. Auto accompaniment packages enable your ST to create automatic bass, drum, piano, brass and guitar parts when you type in the chords.

Whether you're a performer a composer, or just interested in music, your ST makes a powerful basis for any MIDI system.

JARGON BUSTERS

Effects Unit - This useful unit can add effects to your music that make you sound like you are performing in the Royal Albert Hall instead of in the corner of your bedroom.

Expander - Essentially a synthesizer without a keyboard. This means that an expander is less expensive. Many pros use a master keyboard linked to several MIDI expanders giving them a powerful yet portable system.

MIDI - Musical Instrument Digital Interface.

Multi-timbral - Meaning that your synthesizer can play more than one sound at a time. Synthesizers today are either eight part or 16 part multi-timbral - the latter can play up to 16 different instruments simultaneously.

Polyphony - This is how many notes can be played at the same time. Some synthesizers have two or more independent sound genera-

tors. This means that 12 notes can be played at once if you use both sound generators with a 24 note polyphonic instrument.

RAM - The memory that is available for your choice of program. The RAM (Read Available Memory) is cleared each time your ST's power is interrupted - do not forget to save your work regularly.

ROM - You cannot write information to ROM (Read Only Memory). ROM is used for storing data that needs to be permanent, like the operating system and the sounds that come with your synthesizer.

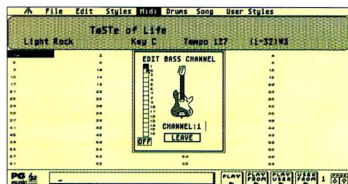
Sampler - A sampler enables you to capture "real" sounds for use in your own music. It digitally stores the information so that you can edit the sounds to your taste, or create totally new timbres. You could lift drum sounds from

a CD or record sounds from mother nature.

Synthesizer - Analog synthesizers use basic saw, sine and square waveforms for sound creation. They use knobs and switches to control traditional electronic components and filters that modify or synthesize a sound. Digital synthesizers use chips that contain sampled waveforms. Digital synths are more powerful instruments and are considerably cheaper than analog synths.

Tracks - There can be up to 64 tracks on a sequencer although there are still only 16 MIDI channels available. You can have 12 tracks assigned for each percussion instrument, for example, and each would be assigned to MIDI channel ten. Having this many tracks is extremely useful if you want to layer sounds for one individual part.

NO EDUCATION



■ To set the MIDI channel all you do is click on the correct box.

BAND IN A BOX V.5

PRICE: £79

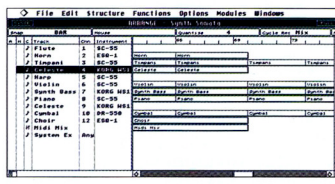
FROM: ZONE DISTRIBUTION

CONTACT: ☎ 071 7385444

STF RATING: 94% (STF 29, 30)

This is an auto accompaniment package that generates professional quality bass, drum, piano, brass and guitar parts in over 100 styles of music like Latin American, Rock, Funk and Jazz. All you have

to do is type in the chords you need and the structure of the song. Excellent if your knowledge of these styles is a little limited or if you need just a bit of inspiration. You can then load your created patterns into your sequencer for further editing.



■ You arrange your songs by just moving the various blocks around.

STEINBERG CUBASE 3

PRICE: £399

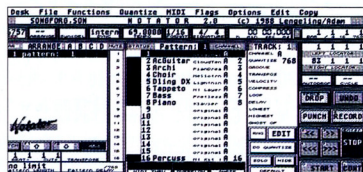
FROM: HARMAN AUDIO

CONTACT: ☎ 0753 576911

STF RATING: 91% (STF 39)

Excellent graphical interface; extremely intuitive for a powerful piece of software. Wide base of Edit windows such as Drum, List, Key, Score and the acclaimed Arrange window which makes composition a joy. MIDI

manipulation is extensive and it even has a MIDI mixer so you can change the volume of individual parts in real-time. The Score module, which enables you to edit and print your sequence using the traditional music notation, should find itself busy in schools.



■ This is Notator's main screen, you can create songs without leaving it.

NOTATOR

PRICE: £329

FROM: EMAGIC

CONTACT: ☎ 0462 480000

STF RATING: 90% (STF 39)

Much favoured by readers of the little black dots because of its excellent score writing facilities. Notator tends to present information numerically so it isn't as immediate as Cubase. Notator

offers a level of MIDI control which is on par with Cubase.

If you need to produce quality scores for your school orchestra or for analysis, then Notator makes light work of the most demanding pieces of music.



■ Sequencer One Plus's main screen.

SEQUENCER ONE PLUS

PRICE: £129.95

FROM: GAJITS

CONTACT: ☎ 061 2362515

STF RATING: 84% (STF 39)

If you read ST FORMAT regularly, you should have the original Sequencer One that was on Cover

Disk 30. It is a mid-level sequencer that is inexpensive and extremely user friendly. Three main differences separate the Plus version from the original. Diamond Drag editing enables you to easily change a note's values, the Juke Box enables you to play one song after the other and the Tempo Map screen enables real-time graphical changes of tempo. If you've got the original, the cheapest way to get the Plus version is to buy the upgrade kit for £39.95. If not, buy it for £129.95 and then upgrade it to for £39.95. This saves you £70.05 on the full Plus version price.

WHAT ABOUT THE HARDWARE?

To piece together a powerful music workstation you need other MIDI peripherals. Listed below is the minimum setup you should consider. Remember, many shops offer educational discounts, so hunt around

because of the large amounts of information and detailed graphics.

Music software

Take a peek at the four recommended music software packages above and you should find at least one that fulfils your requirements. Always try before you buy to see if it does exactly what you want it to.

MIDI keyboard

Try and avoid a keyboard with an on-board sequencer, this is wasted money. Go for a keyboard that is multi-timbral and has a large selection of sounds. The Roland JV-30 fits the bill exactly; 16 part multi-timbral, 24 note polyphonic, has 415 high quality sampled instruments including nine drum kits, as well as digital effects such as reverb and chorus and is very easy to use with a sequencer.

Speakers

To create your masterpiece you obviously need to hear it. Stereo speakers are a must since most keyboards enable you to pan your sounds in the stereo field. A pair of powered Boss speakers are ideal as they have built-in amplifiers, plenty of power and basic equalisation.

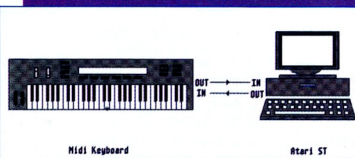
MIDI thru box

As your system grows, this little box solves all sorts of timing nightmares. Rather than chain-

ing all your MIDI peripherals using thru sockets causing MIDI delays, the MIDI thru box splits the signal so that all the MIDI data arrives at each device simultaneously.

Leads

Always buy the best quality leads that you can afford. Because the MIDI sockets on STs are non-standard, always use a high quality MIDI lead which eliminates any potential problems. The same goes for the audio leads between the keyboard and monitors - oh, and never overload powerpoints, especially in a school.



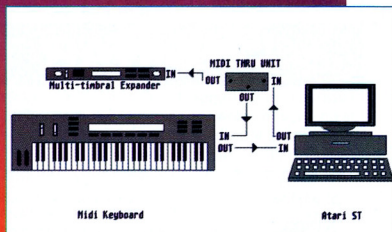
■ This is your basic MIDI setup, with a connection from a MIDI keyboard to your ST.

Your ST

Try and buy your ST with as much RAM as possible. It makes things a lot easier with the more advanced sequencers. Cubase 3, for example really needs 2MBytes in Score Edit mode, since there has to be enough room for the program as well as the notation.

Mono monitor

You need a monitor to see what you're doing. Most music programs need a high res monitor



■ This is the more advanced MIDI setup which includes an expander for additional sounds, and a MIDI thru box to run the signals simultaneously.

specialist software VIDEO TITLER

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THE BYTECRUNCHER'S GUIDE TO ASSEMBLY



You've probably mastered moving numbers around by now if you concentrated hard last issue. The next step is to move numbers and actually make them do something.

Your ST has various preset routines – collectively called TOS – which move numbers around. All you have to do is call on the relevant routine whenever you want to perform a command like printing to the screen or formatting a disk. The way to call a routine is by using the **Trap** instruction. **Trap** takes one parameter, a number which specifies which section of TOS you want to use. **Trap #1** calls the GEMDOS, **trap #13** the BIOS, and **#14** the XBIOS.

Pile it on the stack

To distinguish between individual calls, you need to push a number onto the stack – this is an area of memory pointed to by **a7** which contains its address. For this reason **a7** is often called the stack pointer or **sp**. It is good practice to use **a7** exclusively as a stack pointer. Initially **a7** needs to contain the address just above the stack. When you want to push a number onto the stack, first you have to subtract the size of that number, byte, word or long, from **a7**, and then move it.

```
move.w #5, -(sp)
```

Combined with a **Trap**, you can communicate with TOS:

```
move.w #4, -(a7)
trap #1
```

calls XBIOS 4, or **Getrez** – the routine which tells you which resolution you are running in. Some calls need further parameters, these are moved onto the stack before the two commands above.

Once you've run the **Trap**, **a7** needs to be adjusted to point to the address it originally contained.

Just add it to the number of bytes moved onto it. Suppose you had moved a word (two bytes) and then a long (four bytes) followed by another word. After the **Trap**, you would have to add eight to the stack pointer.

It is very important that you always re-adjust the stack when you've finished with it. Commands like **bsr** (branch to subroutine) use the stack to store the address of the command they return to. If the stack has moved, the program attempts to return to the wrong address and might crash as a result. Adjusting the stack can be done in one of two ways:

```
addq.l #8, sp
or
lea 12(sp), sp
```

addq can only be used to move numbers from one to eight. Any higher, and you need to use the command **lea** – which stands for load effective address – which simply moves it 12 bytes above the address in **a7**, into **a7**.

What a picture

To make things easy for you, there are two files on this month's Cover Disk, **BIOSMAC.I** and **XBIOSMAC.I** – they contain all the calls for the BIOS and XBIOS and are in a handy form called a macro.

Armed with your collection of **traps** and macros, you can build your first assembly program. This

loads a *Degas* picture stored on disk and displays it on the screen. First, your program needs to make sure the operating system macros are included in the Cover Disk listing. You can do this by writing the listing in the same file as the macros, but much more efficient is to use the "include" directive. This isn't an assembly command, but tells the compiler to load a listing from disk, and assemble that before getting on with the rest of the file. The macro files must be included before any TOS calls are made. This is done in lines ten to 12. Once the macros are included they can be used by typing their name in the command field. So, on line 51 of **DEGASHOW.S** you have:

```
Getrez
```

The assembler substitutes the code between **Getrez** **MACRO**, and **ENDM** in the **XBIOSMAC.I** file. Some macros have parameters passed to them, your assembly manual should explain how this works.

Raising the flag

Lines 32 to 93 of **DEGASHOW.S** show the main steps of the program. They consist of macro calls or branches to subroutines. There are a few instructions there that you may not have encountered.

The **beq** instruction is a variation of the **bra** instruction which branches to a label, and executes the instructions there – but, unlike

Read all about it

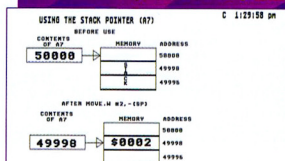
If you are going to use TOS in your programming, you will need to obtain some documentation explaining what each command does. Both the *Devpac 2* and 3 manuals contain information on each call. You might also check out *Compute's Technical Reference Guide, VOLUME III, TOS* (ISBN 0-87455-149-8), and *Atari ST Internals* (ISBN 0-916439-46-1). Have a browse through them in a bookshop to see if the information is useful before spending your cash.

bsr, it does not return. The **eq** is a condition code, it stands for equal, and is dependent on the status register. The status register contains, among other things, five status flags; negative, zero, overflow, carry and extend. Each can be either set or clear. An assembly instruction can affect these flags in different ways, one might set one flag, another might clear one, and some have no effect at all on the flags. The most common way to alter these flags is with the **cmp** command, short for compare, which subtracts two parameters without actually changing them, and sets or clears the flags accordingly to the result.

The condition code only permits the branch if a condition is met, in the case of **eq**, if the zero flag is set; comparing two equal numbers sets the zero flag. If the condition is not met, execution continues with the next instruction. Our program uses conditions to detect errors from the TOS calls, exiting with a message if it finds any. Once assembled, you can single step through the listing using your debugger to see how the macros are expanded, and to give you an idea of the effect the instructions have. **stf**

Nothing happening? Pile it on the stack

The stack is important to distinguish between individual calls as you need to push a number onto it



■ The stack pointer – **a7** – initially contains the address just above the stack, so when you push a number onto the stack, you subtract the size of that number from the contents of **a7**, and then you move it.



FEEDBACK

Do you have a point of view about anything in the ST world? Well, why not share it with us and nearly 70,000 others? Write to The Editor, Feedback, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW

Finally! An STE-only game

Hooray! Let there be rejoicing in the streets. I just read the advert on the back of *STF 44* and found out that there is finally an STE-only game (STE-only in the fact that the only STs it works on are STEs). The game is *Sleep Walker (Comic Relief)* and, surprisingly, the publisher is Ocean, not Atari Games (as you might expect). Frankly, I'm surprised no STE games have come out earlier. The STE has been around for about four years now and has only just had a game written for it, but the Falcon has only just come out and already has games being developed for it.

There are two games I know of that use the STE's enhanced functions to an extent – *The Chaos Engine* and *Teramir* – but, as far as I know, *Sleep Walker* is the first to fully exploit the potential of the STE. In *STF 35* there was an article in the news section headed "Atari take the lead with STE-only games." In the article it said "the first two games to be converted are

Road Riot Four Wheel Drive... and *Steel Talons*." I was very excited about this article and I couldn't wait for the games to come out, but we are yet to see both these games or any STE game on the Atari Games label. I hope Atari haven't forgotten about developing STE games because the ST games industry needs something new to stop it dying altogether. I also hope other publishers follow Ocean's lead so that STE-only games will be a common sight. Perhaps *STF* could give us readers the names of publishers so we can write, challenging them to produce more STE games and to thank Ocean for taking a positive lead.

**Jonathan Norridge
Oxon**

stf: No sooner requested than done, Jonathan – here are a selection of software houses' addresses: Daze Marketing, Dagmar House, 12 Old Street, London EC1V 9AB; Gremlin Graphics, Carver House, 2 – 4 Carver Street, Sheffield S1 4FS;

Microprose, Unit 1, Hampton Road Industrial Estate, Tetbury, Glos GL8 8LD; Ocean Software, 6 Central Street, Manchester M2 5NS; Psychosis, South Harrington Building, 182 Sefton Street, Liverpool L3 4BQ; UBI Soft, Finchley House, 707 High Road, North Finchley, London N12 0BT. You may also be interested to know that Steel Talons is being developed for the Falcon.

Staying home and fishing

Regarding Derek Richardson's letter "We've seen It All Before," I can only agree 100 per cent with what he says – software writers must get some original ideas going or they will end up in the workhouse! My star sign is Cancer – and Cancerians have the most fantastic imagination of all the 12 signs – so I put my thinking cap on and came up with an idea for a game which I have not seen before. How about a fly fishing program? I am not a programmer myself but I am sure wizzards won't take long in writing a

program like this. I thought the start could be:

1. Select the right flies from the box.
2. Select the correct rod or line.
3. Look at the water to see whether or not the fish are jumping.
4. See what the weather is doing – whether it's windy and rainy or hot and sunny.

Now the actual fishing itself it should not be too easy, so a lot of random code would have to be put in, sometimes you would catch nothing, other times you might catch a bag full – just like the real game. There are many different varieties of fishing as well, so all the punters are catered for. If fishing keeps millions happy outside it will surely keep them happy inside!

**R McGlen
Northumberland**

stf: Thank you for that interesting idea – it sounds as if you could have the start of something there, although I tend to get the impression that many people go fishing to get some peace and quiet away

EXPENSIVE DOORSTOPS?

I can stand it no longer. I've been following with great interest the debate raging in your pages concerning the reluctance of software houses to cater for the ST market. Although enthusiastic, unfortunately, until Paul Talbot's letter appeared in February's issue, you appeared to have thrown all commercial reasoning out of the window. Writing to software houses in a vain, however commendable attempt to "bully" them into staying in a declining ST market (in terms of market share) is naive at best and a total waste of *ST FORMAT* readers' time at worst. Now don't get me wrong, I for one am immensely pleased to see a quality magazine, such as yours, be our champion in the fight to prevent our STs becoming expensive doorstops. It is a noble cause and it is also misdirected. The letters we should be writing, however, should be addressed to Atari UK. Let me explain...

The reason software houses are deserting the ST is because of what economists term the "opportunity cost" of not doing so. In other words, why should they commit expensive resources such as time, money and people on developing software for the ST when there is a

far greater profit to be made developing for the Amoeba? After all, software houses are just western capitalist institutions and exist only to maximise their return on investment, not to be charitable to hard-done-by ST owners.

The root cause of all this woe is lack lustre demand for ST software – and when I write of "demand" I mean the parting of cash, not promises and good intentions. To attract them back to the ST market, demand must pick up again; the easiest way of boosting demand for ST software is to sell more ST base units. This is where Atari UK come in. It's time that Atari shifted as many STEs as possible. I should think that the STE has repaid its investment by now, so Atari should price a 1040 STE with a mouse but none of the other promotional gimmicks at no more than £150. This is low enough to start eating into the console market. Atari should then market this aggressively emphasising its adaptability, the range of available software, but most importantly upgradability and compatibility across the family of ST computers since this customer base may well be the source of future Falcon sales. Should demand not beget demand, then, as a final recourse –

remember that lack of software killed off both Betamax video recorders and DAT recorders, even though they were, and are, the technically superior formats – Atari should reopen its software division, buy up the licences for all those games that have sold well on other formats, yet are not going to be released on the ST and make a profit out of them themselves. I wouldn't mind betting that software houses would be watching those sales figures eagerly and perhaps be reconverted.

Steve Phipps, Herts

stf: That's one way of trying to boost demand, but the only thing that strikes me that you've forgotten is the cost of this aggressive marketing – if Atari were to price STEs at £150 each, and even if they shifted huge numbers of them, their profitability, from this source, would be unlikely to be able to support the amount of advertising you suggest. Also, the console market is completely different to the ST market, being, in general younger and totally games orientated, so whatever the price of STEs, they still don't have the "credibility" factor which is what most people who buy consoles are after.

Thought for the month

I am fed up with people who don't know what they are talking about knocking Atari's marketing. Let's look at the facts; we all know they produce great machines and the Falcon is the latest in a long line of them. The ST was very well marketed and, for the first four years of its life, was the number one seller. Yes, it was overtaken by the Amiga, but what computer historically has ever had longer than five years at the top?

"Why are Atari not advertising the Falcon?" people moan and in the next sentence complain that they want one and cannot get hold of one... precisely! What would you do if you were let down by production and could not get enough machines to satisfy demand? You certainly would not waste good money advertising it and whipping up more demand that you cannot satisfy.

I suggest that when Atari has a reasonable quantity of Falcons in the consumer case, they will advertise as much as they did in the early days of the ST - old figures show

that Atari spent more on TV advertising than any other computer-related company in 1988 and 1989! Then watch it fly.

In the meantime they will continue to sell all the Falcons they can manage in the old case to real enthusiasts. What a move that is, eh? They either wait until the middle of this year to get any income at all from the Falcon or alternatively they sell x thousand in an old case to people who cannot wait. How to make money out of something that is, in reality, not finished!

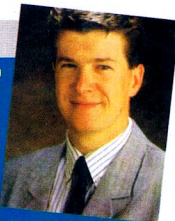
Far from being bad at marketing, that type of slick move shows me just why Atari are still in business almost 20 years after starting in this industry while hundreds of other hardware companies have gone bust. I am a lecturer in marketing and would recommend that anybody who looks at the way Atari are run is a prime example of how to stay in business.

Derek Whitely,
Buckinghamshire

Darryl Still is Marketing Manager at Atari UK.

stf: That's a very interesting point, Derek, and throws a whole new light on the way you can look at Atari's marketing of the Falcon.

I'm sure many people would agree that making money out of something that isn't quite finished is a brilliant idea, at least from the business perspective. However, for many people, the frustration they feel at not being able to get a Falcon when they want one is expressed by blaming the people they perceive to be at fault - seeing another person's point of view is not always the easiest thing to do, and certainly not if it's a faceless company. Just take a look at the photo above of Darryl Still, the Marketing Manager of Atari UK, and make up your own mind about the whole matter.



from the hassle of modern life, and by bringing fishing indoors you'd rather be defeating the object of all that. Equally, however, I was under the impression that people went to see football matches for the atmosphere in the stands, but the enormous popularity of footie sims on the ST totally defies that reasoning! Does anyone else have an original idea for a game?

It's more fun with two

I have to agree to both Paul Talbot's and Derek Richardson's letters on STF 43. Programmers should include code for second drives or make games hard drive installable. Multi-player games should also be able to use the four player adaptor that came out for Gauntlet 2. The Ninja Turtles arcade game had four players at once, but this was missing from the ST version. At least Anco and Ubi Soft are releasing multi-player games like Kick Off 2 and Dyna Blaster and the new basketball game. I'd be interested to see if the Bitmap Brothers include an option for four human players in Chaos Engine, after all, it's not like it can't be done, is it?

Noel Wallace
Carlisle, Scotland

stf: It's certainly not as if it can't be done - check out our feature on multi-player games starting on page 34 where we take a look at the best of them, and you can see the efforts that programmers have gone to to make games accessible to more than one person at a time.

Plymouth User Groups

Since there is no ST club that I could find in the Plymouth area, I

have started looking into getting one going myself. To this end it would be helpful if you could publish this letter so that anyone who sees it and would be interested in supporting such a club can drop me a line - this would also give me some idea of the numbers I am dealing with and what they would like the club to do for them - broad categories only, please, say, programming or teach-ins. Depending on the level of response, I will reply to individuals by letter or telephone, or place a notice in the local press informing them of dates and venues of meetings.

If there is an ST club already in the area, I would ask whoever is responsible for it to contact me soon so that I do not compete with them and we can discuss pooling our efforts to the advantage of all users concerned.

Raymond Hughes
31 Barton Avenue
Keyham, Plymouth

I have just started up a non-profitable Atari user group for programmers. It gives them the opportunity to get together and share knowledge, tips, advice and the like on all the programming languages common to the ST. The club will also enable programmers to play-test their programs on all the machines in the ST range. This service is invaluable to all programmers, as you can imagine.

This group is non-profitable - there are no membership fees or anything like that - just send me a disk and return postage. This disk can be used to return the disk-based magazine.

Nik Bates,
ICTARI User Group
3 Bernice Close, Plymouth
Devon PL4 7H

stf: It looks as if these two groups should get together, although they are looking to cover different areas of the ST. If anyone is interested in programming (and you certainly should have caught the bug after our feature starting on page 12), get in touch with Nik Bates at the address above. We'd also like to hear from any other user groups around the country - what do you do? What services do you offer? Is there a fee for joining? How big is your membership? Anything like that which could be of interest. Please let us know.

Data cartridges

In your reply to Ben Heyworth's letter (STF 43), you state that data cartridges are not of use to ST owners. This is not entirely true. For a while, Protar sold drives for the cartridges to complement their hard drive range, indeed, they may still do so. However, they would not be useful for *Midwinter 2*, the example cited in the letter and your

reply, since the cartridges are tape cartridges, primarily for backing up and archiving software. Using ICD's The Link, it should be possible to connect a QIC (Quarter Inch Cartridge, the width of the tape used within the carts) drive to the ST. The only problem would be finding the software to drive it.

Rob Evans
London, SW15

stf: Thanks for that - you certainly could use tape cartridges for backing up and archiving software - and there is some software available to drive SCSI tape streamers, but at present it's only available in the United States - we'll be getting a copy soon for review, so make sure you watch this space!

Falcon queries

I'm really looking forward to getting a Falcon as soon as the recased version goes on sale, although I do have a



MY FAVOURITE THINGS

Last issue we asked for readers' favourite software - here are a couple of responses

1. Railroad Tycoon
2. Sim City
3. Jimmy White's Whirlwind Snooker
4. Sensible Soccer
5. Premier Manager
6. Dungeon Master
7. Mercenary 3
8. Llamatron
9. Lemmings
10. Pushover

James Southall, via the STF BBS

Here are my top eight non-games programs:

1. Proteus v4.3

2. Fast Copy 3
3. Pack Ice
4. Super Virus Killer v1
5. Easy Text Plus
6. MDisk
7. Ultimate Item Selector 3
8. Kaosdesk

My favourite games are Monkey Island, Indy Graphic Adventure, Lotus 3, Robocop 3, Street Fighter 2 and Crazy Cars 3.

Daniel Gilson, Beds

stf: Thanks for those lists, we're always interested to see what your favourites are - does anyone have a list of classic games, perhaps those that are not available anymore, that they'd like to share with us?

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JUST A QUESTION OF COMPATIBILITY

I read with interest the letter from A Gunn in *STF* 44 as well as your response. I would like to put in my two penny worth in the argument about the Falcon. The Falcon is an incredible piece of hardware that ought to be very well. There are justifiably many concerns from the ST fraternity about the future of their dated machines, I am one of those myself.

I have an oldish ST running v1.02 of TOS. I have, over the years, built up quite a library of software which I am not willing to lose. Recently *STF* ran a series on how to upgrade your ST with the latest hardware and software developments and I read this with interest. I have a 40MByte hard drive which is full of indispensable software. I was thinking about putting in TOS 2.06 when the Falcon became a reality. I spend a lot of time programming in C and the extra speed of the Falcon would definitely be an improvement over my aging ST, but the question is, will my programs work?

I have Steinberg's *Pro 24*, *Prospero C*, HiSoft's *C Interpreter*, *GFA Basic*, *Dvexpac 2*, HiSoft's *Wercs* as well as a lot of other support software. Should I go for a basic Falcon and maybe get a memory upgrade? Since I already

have a SCSI hard drive, the hard drive is not that important, or should I invest in a TT or a Mega STE with its guaranteed compatibility?

The ST fraternity is, in my experience, unique in the computer world. I recently attempted to up the memory of my 1MByte machine to 4MBytes. Because I had an odd version of the ST, my MMU being a very low version, none of the clip memory enhancements would fit. Evesham Micros sorted this out by "buying" the extra memory off me and offering me a shop soiled hard drive at the normal price. They really went well out of their way to help me - you definitely would not get that sort of help from a PC supplier!

To your comment about the C/STOS argument, I suggest that the average C programmer likes the difficulty of the language and enjoys a good challenge. The average STOS programmer just wants to get the job done. If they have a problem, they cry for help, whereas C programmers would rather puzzle it out for themselves. In order to program in C, you need a lot of manuals, details on system calls and the like. The STOS programmer only needs the STOS manual, all the hard work

being done for them already. C programmers work at their art, STOS programmers just winge, which is why you don't get many questions about C!

Stuart Williams, Luton

stf: Thanks for that interesting insight into the different mentalities of STOS and C programmers - I never appreciated that you could analyse people's personalities by looking at the type of programming language they used.

Onto compatibility... any programs that use GEM are compatible with the Falcon, as are all of HiSoft's programs, but any program that uses a dongle won't work. If you're after 100 per cent compatibility, however, you'd probably be better off getting a Mega STE, they're very cheap at the moment - around £400 for a 2MByte version if you shop around - and, as well as being compatible with your software, it would also be compatible with your hard drive. You could easily upgrade it, too, using SIMMS.

Incidentally, on top of being an ST supplier, Evesham Micros happen to be one of the most popular PC suppliers in the country. It just shows you can't generalise.

couple of doubts - please could you answer these questions and put my mind at rest?

1. When is the recased version going to go on sale?
2. Why has the entry-level Falcon only got 1MByte of RAM and not two like the Amiga 1200? Surely this is a big disadvantage considering its graphic and sound capabilities and it is bound to restrict the software available?
3. How soon is it going to be before the first games become available for the Falcon?
4. Why does Madonna always come near the top in those "most fanciable" polls? I see better-looking women than her walking down the road every day of the week?

**Michael Crompton
Cornwall**

stf: Atari say that they are going to be launching the "consumer version" of the Falcon at the CeBit Show in Germany at the end of March, so it should be available in the UK shortly after that. While Atari are supplying the entry-level Falcon with 1MByte of RAM, Silica Systems are advertising Falcons with 1.44MBytes of RAM - we think, therefore, that they are getting the Falcons they are supplying upgraded to compete better with the A1200 - call them for details on ☎ 081 309 1111. The first games for the Falcon will be coming out at the same time as the consumer version is released - Atari reckon they will have around ten games ready by that time.

Finally, I think Madonna comes near the top in the most fanciable woman polls because she has little compunction about taking her clothes off in public -

that is, in front of people who actually vote in such polls.

Thou shalt not...

I was horrified to read the second commandment "thou shalt not turn on external drive after ST is switched on" in the Well 'Ard hard drives feature in issue 44. Clive asserts that to do so may send random data signals to the hard drive SCSI which may wipe data.

If this is correct, it confirms my suspicions that us ST owners are living in Toytown; I have bought two STs and a STacy, hard drive, several hard drive boot utilities configuring several "serious" programs from music through DTP to financial to run from my hard drive, talked to many serious programmers, retailers, helplines in support of my working applications, my learning curve and their bugs and read the ST press for three years, yet no-one has told me why and how to boot from hard drive without switching on the hard drive after the ST.

Clive has told me why, but please could you tell me how?

**Peter Lemer
Hertfordshire**

stf: Peter, no wonder you're confused, the second commandment actually states "if you have an external drive, then turn it on after the ST has been switched on." You could have problems with the random data signals wiping data if you turn on your hard drive before you turn on your ST - the order in which you turn everything on is: monitor, ST, then the external drive, just one after the other without waiting for the ST to boot up -

if you do wait, your ST is unlikely to acknowledge the existence of the external drive and you then have to boot-up all over again.

Want to share your views with STF's readers? Write to The Editor, Feedback, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW.

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Does this month's feature on programming make you want to start creating wonderful games and demos on your ST?

- ☐ Yes! I've already started ☐ I'm thinking about it
☐ No, I'm not interested in it at all

Is there anything missing in this issue as far as you're concerned?

If so, what? _____

What do you most like about this month's issue?

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Do you have any suggestions for future features or improvements to ST FORMAT?

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1. Which machine do you own?

- a) 520 ST with single-sided drive* ☐
 b) 520 ST with double-sided drive ☐
 c) 1040 ST ☐ d) 520 STE ☐
 e) 1040 STE ☐ f) Mega ST ☐
 g) Mega STE ☐ h) TT ☐
 i) STACY ☐ j) ST Book ☐
 k) Falcon ☐

* If you have a second disk drive or upgraded single-sided drive, tick the double-sided drive box

2. What other computers do you own or intend to buy in the next 12 months?

- Falcon ☐ Amiga ☐
 PC-compatible ☐ Sega Megadrive ☐
 Super Nintendo ☐

3. Which of these applications do you use your ST for?

- Music ☐
 Word processing ☐
 Graphics ☐
 Games ☐
 Business ☐
 Desktop publishing ☐
 Programming ☐
 Comms ☐
 Education ☐

4. What hardware do you (a) own or (b) intend to buy during the next 12 months?

- | | own | intend to buy |
|----------------------|--------------------------|--------------------------|
| Second disk drive | ☐ | ☐ |
| Hard drive | ☐ | ☐ |
| Joystick | ☐ | ☐ |
| Modem | ☐ | ☐ |
| Memory upgrade | ☐ | ☐ |
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| Monitor | ☐ | ☐ |
| Scanner/digitiser | ☐ | ☐ |
| Mouse | ☐ | ☐ |
| MIDI music equipment | ☐ | ☐ |

5. What software do you (a) own or (b) intend to buy during the next 12 months?

- | | own | intend to buy |
|----------------------|--------------------------|--------------------------|
| Word processor | ☐ | ☐ |
| Desktop publishing | ☐ | ☐ |
| Database | ☐ | ☐ |
| Spreadsheet/accounts | ☐ | ☐ |
| Graphics | ☐ | ☐ |
| Music | ☐ | ☐ |
| Comms | ☐ | ☐ |
| Programming | ☐ | ☐ |
| Education | ☐ | ☐ |

6. Will you be buying games in 1993?

- Yes ☐ No ☐

7. Which magazines do you read? (Please rate each out of ten)

- ST FORMAT/10
/10
/10
/10

8. What two main reasons do you have for buying STF? (Tick only two, please)

- For the Cover Disk ☐
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 For our extensive hints and tips ☐
 For our tutorials and series ☐
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10. How many issues of STF have you ever bought?

11. How many do you expect to buy in the next 12 months?

12. How many other people read your copy of STF?

13. What has been your favourite cover on STF? (A reminder can be found on page 58)

14. As regards the ST, do you consider yourself to be

- a novice? ☐ fairly experienced? ☐
 an expert? ☐

15. How old are you?

- Under 12 ☐ 13-18 ☐ 19-24 ☐
 25-40 ☐ 41-60 ☐ Over 60 ☐

16. What sex are you?

- Male ☐ Female ☐

17. What is your annual income?

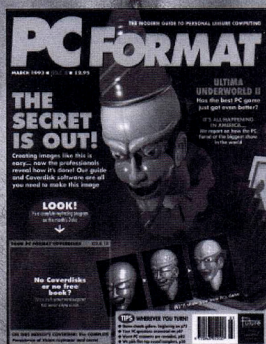
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19. If you'd like to make any additional comments about how we can improve ST FORMAT - and we're always looking for ways in which we can do so - or have any suggestions for features or series, please jot them on a piece of paper and enclose them with this form. The Editor will read each and every one.

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LIFE GOES ON

Although this is the end of this issue, there's no need to be upset about it because there's going to be even more next month. We're going to be looking at ways that you can use your ST for business purposes - not just looking at what you might consider to be boring applications like databases, spreadsheets and accounts packages, but also how STs are used in professional setups for music and desktop publishing. We'll be showing you how you could be making money - and saving time so you can't afford to miss that. We're also going to be rounding up all the floppy drives we can lay our hands on, so if

you're thinking about buying one, check this out first. There's also an interview with Jeff Minter in which we hope to answer the question "What is it about llamas that attracts you so much?" but we'll probably end up talking more about his latest stunning creation, *Llamazap*.

We're going to be starting a new series about something we can all afford, so watch out for that. On top of all this great stuff is the usual blend of reviews of all the latest hardware and software - as well as games, of course, news, previews, handy hints and tips as well as a fantastic Cover Disk to boot!

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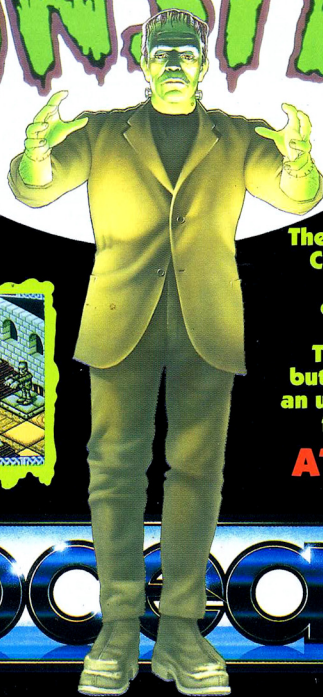
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